The

CHEMIST AND DRUGGIST

SEPTEMBER 20 1958

BRITISH PHARMACEUTICAL CONFERENCE NUMBER

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round-the-clock sulpha therapy with "once-a-day" dosage



LEDERLE LABORATORIES DIVISION



Gyanamid OF GREAT BRITAIN LTD., London, W.C.2



make sure it's advertised in the Daily Mail

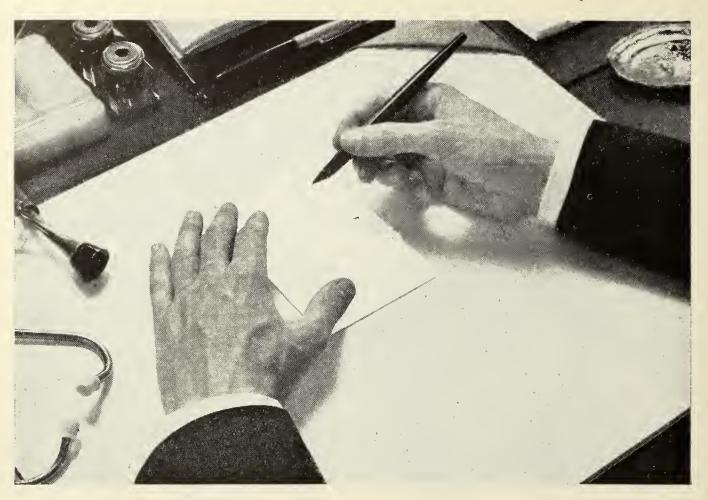
You know that goods will move quickly if they've the right kind of advertising behind them. So when the salesmen eall, the first question to ask them is this: "Is the Daily Mail on the advertising sehedule?"

If it is, you can be sure you're on to a good thing. Because the people you look to for the great bulk of your business, the ones who come in *regularly*, tend to be Daily Mail readers. You may have noticed it yourself.

Daily Mail readers know the advertisements in their newspaper can be taken at face value. Before they ever appear in print they're carefully vetted for accuracy. If a customer is misled, and makes a genuine complaint, the Daily Mail will see that he gets his money back – if necessary by bearing the expense itself. All this in the interest of advertising that can be believed.

So be sure it's a Daily Mail-advertised product every time.

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Doctors have long been aware of the value of compound analysic preparations for the relief of susceptible pains and discomforts.

Now, it is generally agreed, a further advance has taken place in the analgesic field. Codis provides all the virtues of Tab. Codein. Co. B.P.—and more.

In Codis, agents have been added to solubilise

the aspirin base of Tab. Codein. Co. In water, Codis provides—with codeine and phenacetin—calcium aspirin.

It is substantially neutral, and is therefore extremely well tolerated.

For these reasons the medical profession has widely endorsed Codis. You will find yourself dispensing it increasingly often.



CODIS

reprosition Fach Codis tablet contains: Acid Acetyl

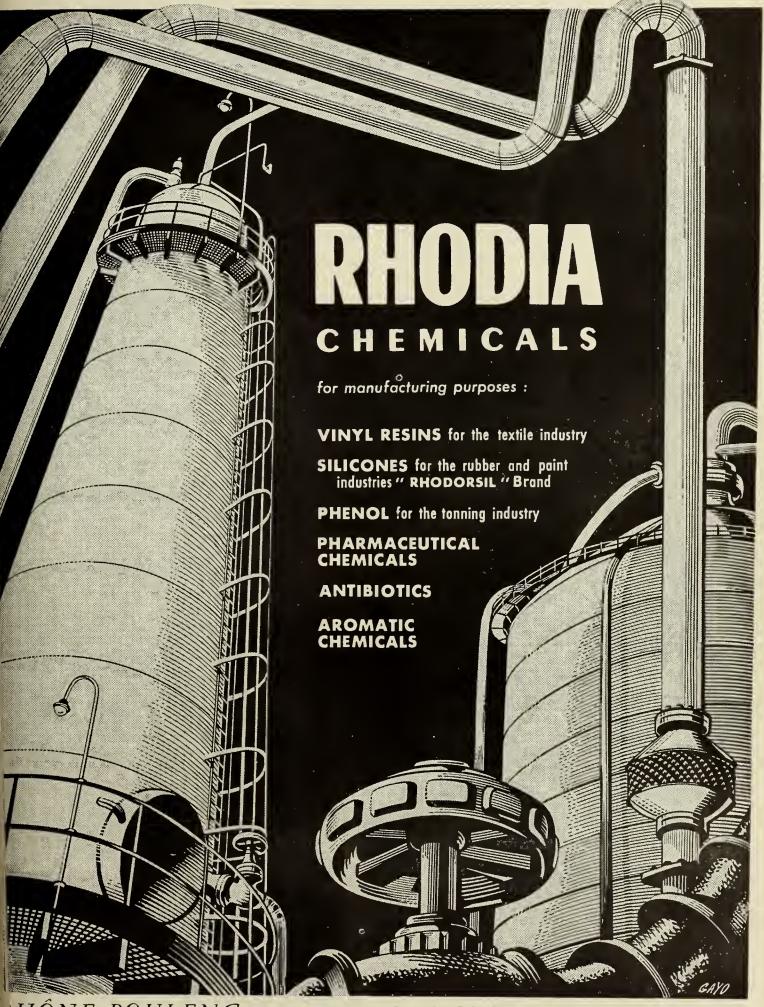
Composition. Each Codis tablet contains: Acid Acetylsalicyl. B.P. 4 gr., Phenacet. B.P. 4 gr., Codein. Phosph. B.P. 0.125 gr., Calc. Carb. B.P. 1.2 gr., Acid. Cit. B.P. (exsic) 0.4 gr.

CODIS IS NOT ADVERTISED TO THE PUBLIC

DISPENSING PACK (Purchase Tax Free). 500 tablets in distinctive gold foils of 10 tablets each, 25/- per box.

PUBLIC SIZES. Pack of 20 tablets (in foil), 2/8 inc. P.T.; 8 tablets, 1/4 inc. P.T.

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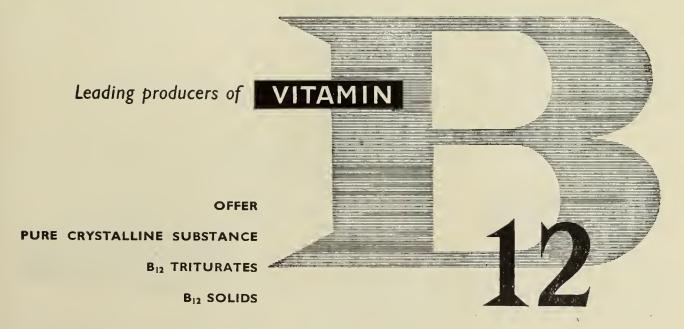
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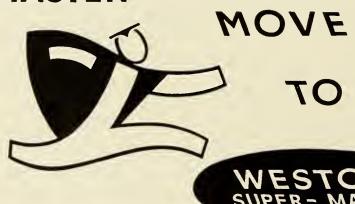
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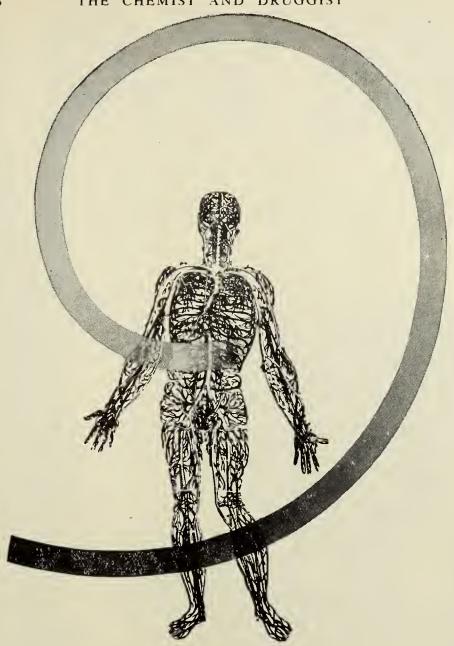
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Guavin is *not* another drink boosted with synthetic vitamins. Guavin is 100% fruit juice, containing more natural goodness than any other fruit drink on the market.

Guavin brings a unique double gift of goodness to every sunstarved family in Britain.

GUAVAS FOR HEALTH! Guava juice is noted among nutritionists as one of the very richest sources of natural Vitamin C (richer by far even than blackcurrant juice). One fluid ounce provides a full day's requirements of Vitamin C for the average adult.

GRAPES FOR ENERGY! Grape juice contains a high proportion of glucose—pure natural glucose for instant, zestful energy. Only Guavin offers such a rich measure of summer's natural goodness. It's a *natural* best-seller.

- ★ Guavin contains no added colouring or flavouring matter
- ★ Full contents are listed on the label
- ★ Look for the golden Guavin label
- ★ ... and the amber bottle, used to protect the Vitamin C



BUAVIN

and a rich new source of profits for you!

National Advertising Starts

OCTOBER

4

frequent, dominant, strategically - placed vitisements in the mass-circulation women's zines—the magazines that make *mass* sales!

MAN • WOMAN'S DAY WOMAN'S REALM

circulation is 5,701,742. Total readership for circulation is 5,701,742. Total readership for circulation of advertisements reaches 18,242,000. The eighteen million readers! Every one of them the real need for the natural goodness in Guavin. The in will sell—and sell well!

Bottle contains $12\frac{1}{2}$ fl. ozs. (min.)

Retail 2/9 Per Bottle

ANNIWILL BE SOLD ONLY THROUGH CHEMISTS AND
HEALTH FOOD STORES

ur vholesaler has stocks. Place your order now of rofit from the first sales rush.

OVER 18,000,000 PEOPLE
WILL SEE THESE
COMPELLING
ADVERTISEMENTS!

(1) win is made by the people who pioneered lemon juice in a bottle)

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(Est. 1931)

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new way to start the day

GUAVIN

The juice of sun-drenched guavas and luscious black grapes



Guavin is new, delectably new . . . a blend of the natural juices of sun-drenched guavas and luscious black grapes. It's a treasure-house of tropical sunshine . . . with a double gift of goodness for you and all your family.

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been available in Britain! Grapes for energy! Grape junce contains a high proportion of glucose pure, natural glucose for instant, start-fle-day-bright energy.

Only Gravin offers such a rich measure of summer's vital goodness. Look for the amber bottle (used to protect the rital ingredients) and the golden Guarin label. Then give your family this double gift of goodness—every day!

Councin contains no added colouring or flucturing matter of my described last covered orienton label.

the best days GUAVIN

produced by the people who provided homon june in a bottle

PASCALL KAROHI LIDE (RO) 100 A GOVE (2)



in a propelling Cycpencis

especially when its only

Here's a certain seller, if ever there was one! An eye pencil that propels itself—at a fantastically low price! And there are refills as well—2 for 2/-. Outdoor Girl Eye Make-up products outsell all others! This

new addition to the range—
heavily advertised—featured
on TV in Woman's Hour—
is going to break all records!

Available in an attractive gold counter card holding . . . dozen pencils and dozen refills (illustrated).

39

Double refill 2/-

Black

Dark Brown

Light Brown

Grey

Biue-Green

Outdoor

Girl



Our ever-expanding advertising campaigns in the national, provincial and magazine press are constantly stimulating new sales, which mean new customers for you!

Here are five examples of our new plastic processed Showcards. Four are in full colour and one in black and white and all are eye catching, appealing and decorative.

We shall be pleased to send you display matter if you will let us know your requirements. Attractive "G" Brand Showcards are also available.

Please address your enquiries to

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See what we mean? Here are two from the new Spa range. A Bath Brush and Nail Brush set—sparkling plastic handles filled with high quality nylon. 'Parisienne' a lovely dressing table set of matching hairbrush, mirror and comb.

ORDER NOW! These new Spa lines are bound to be best sellers. Spa gives your customers wonderful value... builds up big profits for you. It's going to be worth your while to get the whole 1958 range of Spa Gift Sets on your counter right away.



SPA BRUSHES LTD. FREEMAN WORKS • CHESHAM • BUCKS Telephone: Chesham 371



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lozenges

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PACKING: Cartons of 18 lozenges sealed in metal foil. Retail 2/-. Trade 1/4d.

1313/75/1

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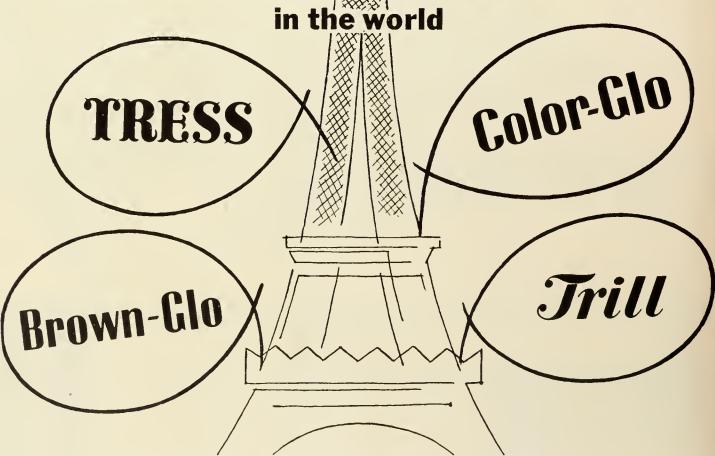
YER PRODUCTS LTD., Eden Street, Kingston-upon-Thames, Surrey

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B A Y E R



are the greatest makers of Hair Beauty Products in the world



The greatest Hair Research Laboratories in the world are behind L'Oreal Products. That fact, and the marketing 'know-how' of Golden Ltd., distributors of all L'Oreal products marketed here, explains the continuing sales success of every Hair Beauty Product from L'Oreal of Paris.



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This generous offer shows a cash profit for you of

on only 3 dozen Leeve

Leeve is backed by a powerful national advertising campaign which

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This offer applies only to orders received by September 27th

THE CHEMIST AND DRUGGIST September 20, 1958 19

Leeve

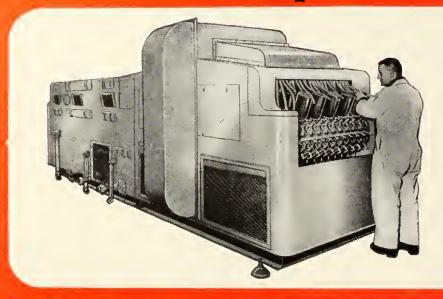
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The successful successful successful,

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The successful success

A companion product to Placentubex

GIFTED IDEAS FOR CHRISTMAS





E.623 HALEX 'CARESS' WEEKENDER

A complete toilet kit - mirror, nail file, scissors, comb, hairbrush, toothbrush tube, pocket cloth brush and utility box. All packed in a P.V.C. case of peacock blue. (Pink, blue, green pastel pearl).

Retail price





D.413 'AMBASSADOR' GENT'S SET

A sturdy set of toilet articles designed to appeal to all men—and made to stand up to rugged wear. Hairbrush and comb, nailbrush and mirror all of matching ivory finish.

Retail price

from HALEX



For Her





For the Kiddies

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Hairbrush, mirror and comb in silver or gold finish with delicate floral inserts. Retail price **E.615 'Harmony' 4-piece Set** also available with the addition of a matching cloth brush. Retail price 26/6

|9/||





D.630 BATH BRUSH SET

Matching bath brushand nailbrush decorated with a penguin motif. (Black, pink, green, primrose or white pearl). Retail price

12/6

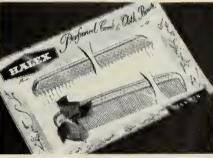


E.363 'NODDY' TOILET SET



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e). Retail price 5/





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Order from your Wholesaler

LAUGHTON & SONS LTD . BIRMINGHAM, 14

GIFTED IDEAS FOR CHRISTMAS



F438 'SOOTY' **NIGHT LIGHT**

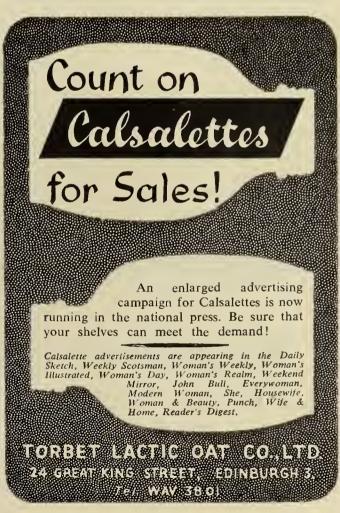
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another idea overleaf





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Telephone: Hunts Cross 1321



GIFTED IDEAS FOR CHRISTMAS





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from

another idea overleaf



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What a altt

THIS SENSATIONALLY SUCCESSFUL RAZOR MEANS BIG CHRISTMAS TRADE FOR YOU



AND TREMENDOUS EXTRA PROFITS FOR YOU!

RAZORS TO THE DOZEN

DEAL No. 1 14 razors at 44/2 plus 13/3 p.T.

This Deal gives you a total profit of 33/7 on an outlay of 57/5! This means that you get an EXTRA 13/- PROFIT with every Deal No. 1 ordered. (Retail Price 6/6 each including magazine of 10 blades)

RAZORS TO THE HALF-DOZEN

DEAL No. 2 7 razors at 22/1 plus $6/7\frac{1}{2}$ P.T.

This Deal gives you a total profit of $16/9\frac{1}{2}$ on an outlay of $28/8\frac{1}{2}$! This means that you get an EXTRA 6/6 PROFIT with every Deal No. 2 ordered. (Retail Price 6/6 each including magazine of 10 blades)

You can order now as many Deals as you like

Order from: Ever-Ready Razor Products Limited, Colquboun Ave., Hillington, Glasgow, S.W.2 or through your usual wholesaler.

INJECTO-MATIC RAZOR

Here's the razor that men and women will be giving for Christmas this year . . . the new Pal Injecto-matic . . . functionally designed for one specific purpose: to give the closest shave of all. Ever-Ready give a money-back guarantee on every razor.

Shaves closest of all!

Supported by heavy advertising

All retailers who stocked this new razor when it was launched this spring report extraordinarily rapid sales. "It went off the display stand like and w melting," said one retailer.

Dramatic advertisements on TV and in the Press helped these phenomenal sales. So did the Display Stands.

For Christmas the advertising will be even heavier. Cash in! Accept the special offer now and use the Display Stands.

EVER-READY give a money back guarantee on every razor

PRECISION (E & R) PRODUCTS



incubation period and the hair Approved by members of the Medical can be washed 24 hours after harmless to hair and scalp. Easily treatment without reducing applied. Non-tritant. Non-poisonous. Unobtrusive. Non inflammable.

AVAILABLE FROM ALL WHOLESALERS

Write for free sample and leaflet

the residual lethal effect.

the worst case of head infestation within minutes. Its toxic effect lasts longer than the nits'

Dept. CD, JEYES' LABORATORIES LTD

River Road, Barking, Essex

GIFTED IDEAS FOR CHRISTMAS





F350 'NODDY' MEALTIME SET

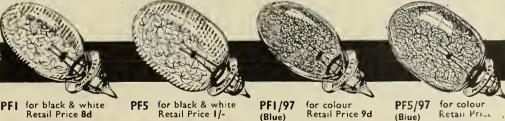
Bowl and mug gaily decorated with a colourful picture of 'Noddy'. Pink, blue, or ivory white. Retail price 4/11d.

another idea overleaf

I only need to stock Hashbulbs flashbulbs



Yes! the four popular 'Photoflux' flashbulbs satisfy all the requirements for both black and white and colour flash photography.



for colour Retail Price

FLASHBULBS



for 'Perfection in a Flash!'

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Century House · Shaftesbury Avenue · London W.C.2

(PP3060)

bright sparkling colourful tough durable long-lasting



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choose this versatile plastics material

transparent cosmetics and drugs.

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Containers made by Hyde Plastics Ltd using Styron Polystyrene

BRITISH RESIN PRODUCTS LTD

SALES AND TECHNICAL SERVICES DEVONSHIRE HOUSE PICCADILLY LONDON W1 HYDE PARK 0151

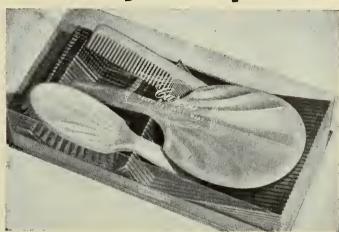
MANUFACTURED BY DISTRENE LIMITED



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London Distributors:
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GIFTED IDEAS FOR CHRISTMAS



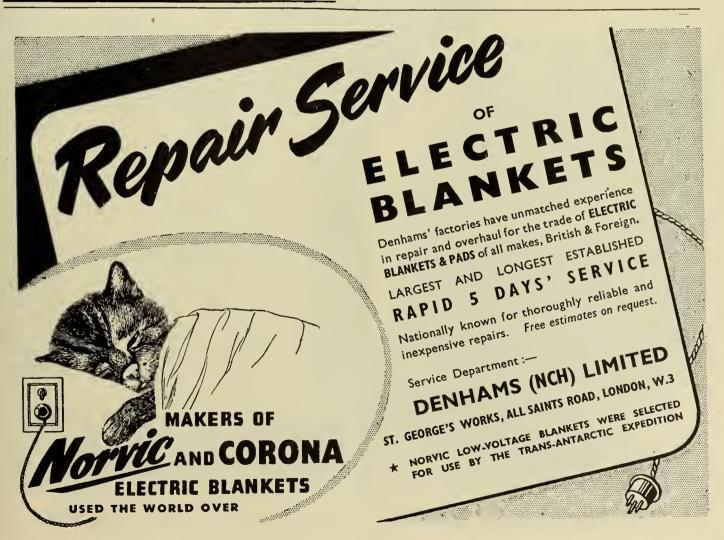


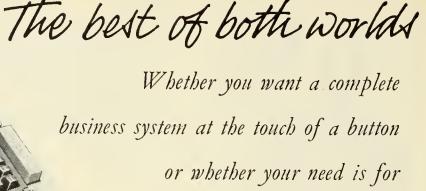
E114 'CARESS' 3-PIECE SET

An attractively styled hairbrush, mirror and comb in a wide range of colours—pink, blue, green, lilac, lemon, white pearl or black. Retail price 19/11d.

from HALEX

another idea overleaf





lowest price possible, your search ends here.

a good robust cash register at the

Clary

the world's fastest adding/listing cash register. A complete control system in itself. Keeps check on all money received all money paid out THIS IS AUTOMATICALLY SUBTRACTED providing true balance of cash.

Hand and Electric Models receiptissuing, or docket-printers FROM £115.

Universal

General purpose machine £1.19.11½. Keyboard, Bold price indication. Well planned cash drawer. Price only £79.10.

OTHER MODELS TO MEET INDIVIDUAL REQUIREMENTS.

Biochemicals

The Research products of Nutritional Biochemicals Corporation of the U.S.A. are readily available in Great Britain from Kodak Limited.

The range includes:

STANDARDISED AMINO ACIDS
PEPTIDES
NUCLEO PROTEINS
PURINES
VITAMINS
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STEROID HORMONES
GROWTH FACTOR ANALOGUES
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BIOLOGICAL TEST MATERIALS
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A list of nearly 2,000 items is available for distribution.

KODAK LIMITED

KIRKBY INDUSTRIAL ESTATE · LIVERPOOL

Telephone: Simonswood 2977/8

GIFTED IDEAS FOR CHRISTMAS





D149 GROOVED BACK MILITARY BRUSH

A sturdily designed brush that stands up to hard wear. Available in ivory white or walnut finish. Retail price 7/11d.

from HALEX

another idea overleaf

Not enough for Mr. Smith

It's not enough for Mr. Smith that his counter satchels should hold his customers' purchases. Nor is it enough that they should create a good impression of his pharmacy. Mr. Smith's satchels have to work a little harder — they have to help to stamp his personality on his customers' minds.

That is why every Certor counter satchel (or Certor dispensing carton) which comes out of Mr. Smith's pharmacy bears the name, "J. Smith." It gives to the satchel its exclusive personal touch.

And the extra cost of own-name printing? All Mr. Smith pays is a mere 3/6 per 1,000 for 5,000, or 2/- per 1,000 for 10,000. Mr. Smith builds up

his goodwill inexpensively. He makes o-day's sales pave the way for to-morrow's.



Samples of Certor own-name printed satchels and cartons on request.

MACDONALD & SON LTD. of MANCHESTER & LONDON

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When the script calls for

P.A.S. cachets or isoniazid

PASHETS

or **PYCAZIDE**



'Specialists in tuberculostatic drugs'

SMITH & NEPHEW PHARMACEUTICALS LTD WELWYN GARDEN CITY · HERTS.



GIFTED IDEAS FOR CHRISTMAS





F611 "BAMBI" TOILET SET

This Disney gift pack holds a baby brush, baby comb, soap case, powder bowl and tray decorated with a "Bambi" motif in relief. Pink or blue. Retail price 15/11d.

from HALEX

another idea overleaf



SELLING FAST! in an increasing market

- ★ For 2" x 2" Slides
- * 3½ times magnification
- * Attractively packed.

Strongly made in black plastic, the C.O.I.L. viewer provides an inexpensive means of viewing $2'' \times 2''$ slides at a useful magnification—higher than that of any other viewer at a comparable price.

The field angle for a $33m/m \times 23m/m$ transparency is about 30° , and provision for focusing is made by incorporating three slots to take the slide. It is individually packed in a smart red and black carton.

Please write for trade terms.

COMBINED OPTICAL INDUSTRIES LTD.

PLASTA WORKS, BATH ROAD, SLOUGH, BUCKS.
Telephone: Slough 21292.

the oral treatment of diabetes mellitus

DEVELOPED by Farbwerke Hoechst AG. of Frankfurt/M., under the research No. D 860, Rastinon tablets have now an established place in the therapy of diabetes mellitus. The large volume of clinical work and the number of papers published reflect the world-wide interest in Rastinon tablets. This work clearly shows that for the suitable patient Rastinon tablets provide a form of therapy which is

SIMPLE · SAFE EFFECTIVE · ECONOMICAL

The suitability of a patient for treatment with Rastinon tablets is readily assessed in the diabetic clinic and once stabilised no difficulties have been experienced in controlling the patient. An acute intercurrent infection may necessitate a temporary return to insulin therapy.

Each Rastinon tablet contains 0.5 G. of N-butyl-N'-toluene-p-sulphonylnrea. The approved name for this chemical in the United Kingdom and in the United States of America is tolbutamide. In the United States the tablets are available under the trade name Orinase.

Rastinon tablets are prescribable under the National Health Service. As from 1st July Rastinon tablets are listed as a P.1, S.I, S.IV poison. All stocks are now labelled in accordance with the regulations.

PACKS AND PRICES

TRADE PRICE

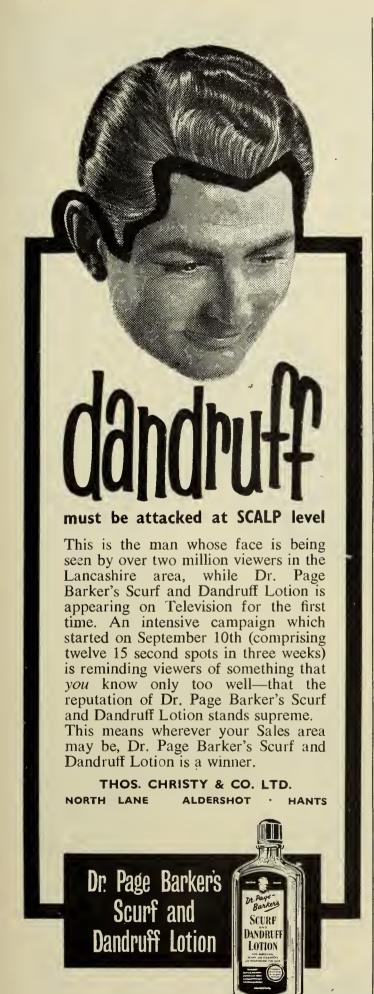
YOU MAY ORDER DIRECT OR FROM YOUR USUAL WHOLESALER

Rastinon tablets are made in England and are available in U.K. exclusively from:—

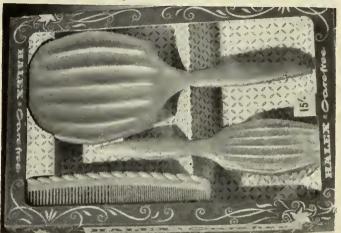
HORLICKS LIMITED, SLOUGH, BUCKS.

Distributors in the United Kingdom for

HOECHST PHARMACEUTICALS LIMITED SLOUGH



GIFTED IDEAS FOR CHRISTMAS





E622 "CAREFREE" 3-PIECE SET

A new and gracefully designed dressing table set of hairbrush, mirror and comb in the ever popular shades of pastel pearl blue, green, or pink. Retail price 15/-d.

from HALEX

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QUALITY, CHESTER





GIFTED IDEAS FOR CHRISTMAS





D566 "LONG TOM" CLOTH BRUSH

A black long-handled cloth brush with five rows of nylon tufts.

Retail price 8/11d.

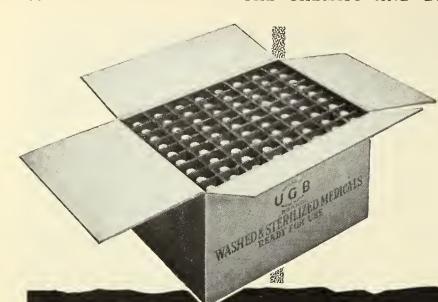
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another idea overleaf



Display material is avallable on request.

B. N. FURMAN [Productions] LTD. 133 FONTHILL ROAD, LONDON, N.4



WASHED and STERILISED SERVICE for

MEDICAL BOTTLES

READY FOR IMMEDIATE USE

Washed and sterilised in accordance with approved medical practice, these White Flint Bottles are available from stock ready for use in non-returnable divisioned cartons. The service covers 1-oz. to 20-oz. capacities in the three types illustrated.

BOW PANELS	External Screw Thread, plain, fitted White Korkalite Caps.
MEDICAL FLATS	External Screw Thread, plain, fitted White Enamelled Aluminium Caps or White Korkalite Caps.
MEDICAL FLATS Cork Mouth* plain	protected with metal foil to ensure clean and sterile interiors suitable for all medicines.

*Also available graduated in table-spoons in size 6-oz. to 16-oz. only.

U.G.B. has given this unexcelled service for more than 30 years and represents a substantial timesaver for busy Chemists, Hospitals, etc. U.G.B. will be pleased to give advice on any bottle problems you may have.

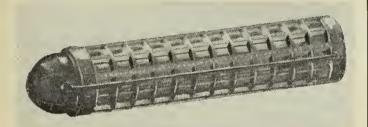




UNITED GLASS BOTTLE MANUFACTURERS LTD

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NOVELTY CURL FOUNDATIONS "FABULO" BRAND



The world's best and cheapest UNBREAKABLE (polythene) HAIR ROLLER or CURLER in 2 sizes for professional use by Hairdressers, for use with Home Perms or simply by damping the hair.

Size l=6 in Cellophane packet (very attractive) 3'' long Size 2=5 ,, ,, ,, ,, $3\frac{1}{2}''$,,

Price 15/10 per doz. packets of either size +30% P.T. Min. Retail Price 2/6 per packet of either size.

Samples on request

Supplies obtainable through the wholesale trade or direct from:

HAETAM LTD., 63 Corporation St. Manchester 4

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Wholesalers who do not yet stock these renowned Curiers please contact us for trade terms.

Export enquiries welcome-Special prices & terms will be allowed

GIFTED IDEAS FOR CHRISTMAS

N108 HOT WATER BOTTLE

A welcome bedtime companion, designed for thorough reliability. In pink, blue or green.

Retail price 15/6d



from HALEX

another idea overleaf

The house of Woolley for all

requirements

your

PHARMACEUTICALS



ETHICAL & PROPRIETARY
MEDICINES

CHEMISTS SUNDRIES



SURGICAL INSTRUMENTS

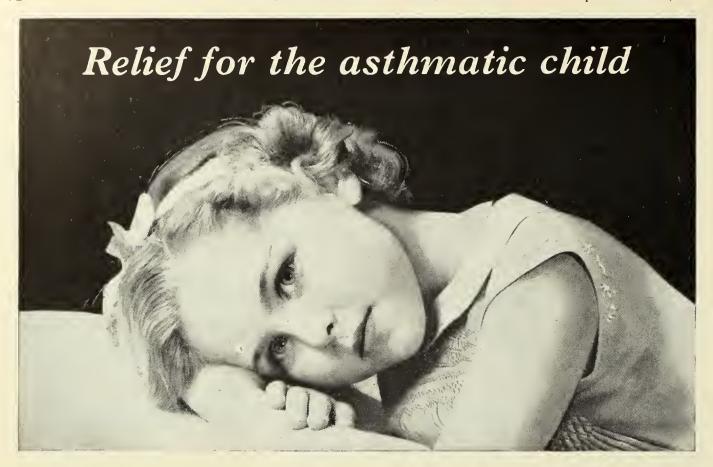


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JAMES WOOLLEY SONS & CO. LTD., VICTORIA BRIDGE, MANCHESTER, 3

Incorporating J. C. Arnfield & Sons Ltd., Stockport



UNIQUE BUFFERED THEOPHYLLINE SYRUP

Relief from the apprehension and acute distress of an asthmatic attack is provided by 'ENGLATE.' In almost all cases gastrointestinal disturbance is entirely absent. The combination of theophylline sodium with glycine permits full and effective therapeutic activity and by reducing gastric precipitation of theophylline enables larger doses to be prescribed.

ENGLATE

Trade Mark

Theophylline Sodium Glycinate

SYRUP (containing 120 mg. of theophylline sodium glycinate per 4 ml.) for children up to 12 years. Available in bottles of 8 fluid ounces.

TABLETS (300 mg. of theophylline sodium glycinate). Available in bottles of 50 and 500.

Literature is available on request.



A.& G. Nicholas LTD. Slough, Bucks, England



Portrait of a Best-Seller

ANDREWS has the largest sale of any effervescing saline in the world. This is because:—

- ★ The public have confidence in it.
- ★ It has never been sold by exaggerated claims.
- ★ Its packing and keeping qualities are guaranteed.
- ★ It is advertised by a powerful national campaign, including extensive use of T.V.

Andrews

for INNER CLEANLINESS

GIFTED IDEAS FOR CHRISTMAS



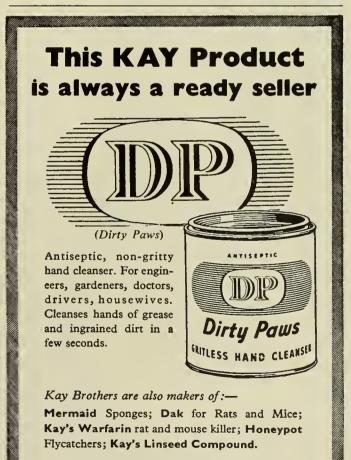


E606 "BELINDA" JUNIOR SET

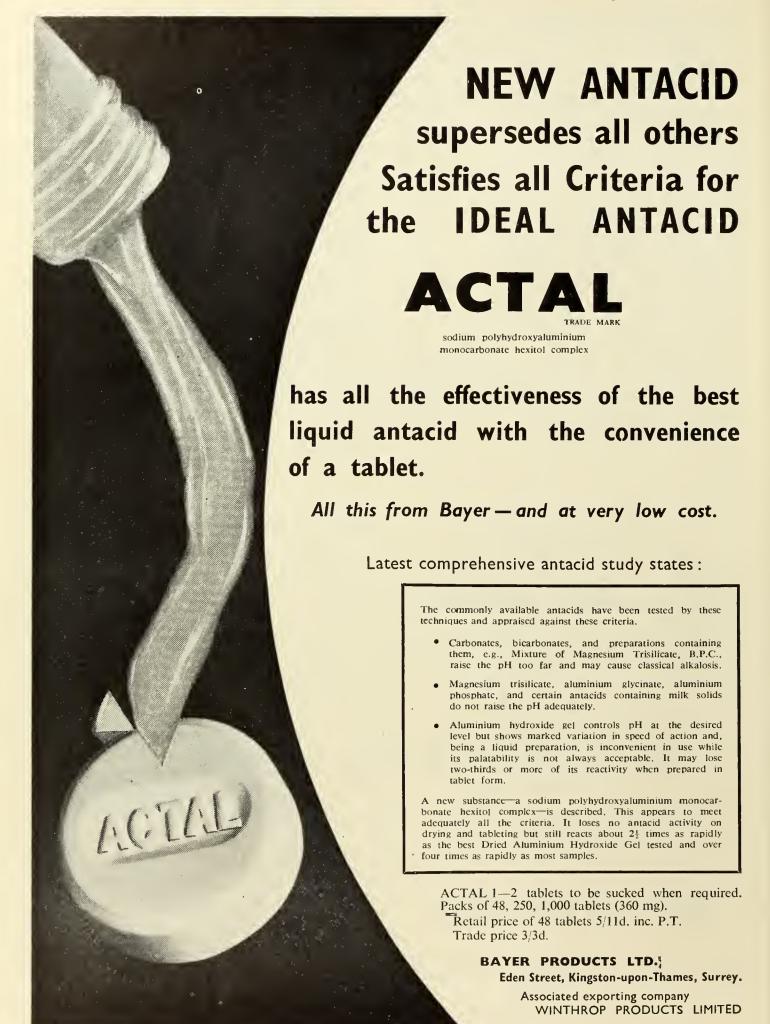
A very feminine hairbrush complete with comb and two matching hair slides—in pink, blue or green pearl. Retail price 4/11d.

from HALEX

another idea overleaf



KAY BROTHERS LIMITED · STOCKPORT



Your customers know...

that Cuticura Ointment is the best possible all-round stand-by for cuts and grazes, minor burns, all kinds of spots and skin blemishes. Those who may not yet know it—rising teenagers, for instance—are being told about it by our nation-wide advertising. Simply remind them—by display and recommendation—that soothing, antiseptic Cuticura Ointment should always be kept handy in the home; and make sure that your stocks are ready for the demand.

Cuticura Ointment

also

SOAP • TALCUM POWDER
HANDCREAM • MEDICATED LIQUID
SHAVING STICK

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D412 'CARLTON' GENT'S SET

A gift that every man appreciates—hairbrush, nail brush, comb and shaving brush in matching ivory finish.

Retail price 19/6d.

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YOU CAN AFFORD A SHOP LIKE THIS!



We are fitting out hundreds of shops, in many cases for as little as 50s. per week. Here is an opportunity to bring those much sought after EXTRA customers inside your shop... these EXTRA Sales alone will more than repay the cost of your superbly produced installation.

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CORN EXCHANGE, LIVERPOOL, 2

Please send	me	details of	the	Salesmaster
range				

NAME

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Exporters and Importers of

PHARMACEUTICAL & FINE CHEMICALS
INDUSTRIAL CHEMICALS
HORMONES · ENDOCRINES · STEROIDS
ALKALOIDS · GLUCOSIDES
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Sole agents for the U.K. and other countries for:

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A NEW ALL-PURPOSE PERSONAL

WEIGHING MACHINE

For Babies—Children—Adults

No Loose Weights—Capacity 20 stone x 1 oz.

These machines are manufactured in our Works at Edmonton, London, N.18.

They have been specially designed for Chemists' shops where space is limited.

Strongly constructed of Cast Iron—white enamelled with tare bar to balance off the Baby Basket.

Will give extremely accurate weighing service and comply with local Weights and Measures Bye-laws.

Obtainable from your usual wholesaler or direct from the makers.

Hire Purchase Terms are available.



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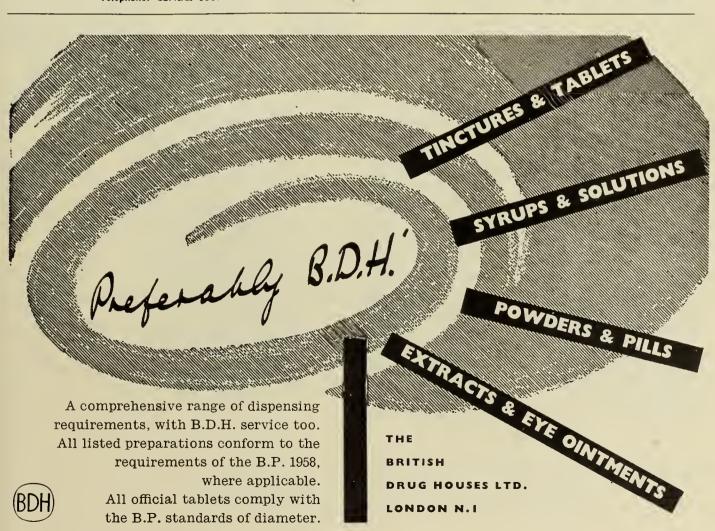




E624 'CARESS' CASKET MANICURE SET

Scissors, nail file, nail cleaner and cuticle pusher, plus hairbrush and comb in an attractive be-ribboned presentation casket. Retail price 17/11d.

from HALEX





Last year's record sales of 8 mm. and 16 mm. projectors *must* mean, an ever-growing demand for Movie-paks. Make sure you are stocked up to meet the demand. Now is the time to get supplies of the new Catalogue for distribution and display. To ask for free showcards and display material.

And to place your order.

POST THIS COUPON FOR PUBLICITY MATERIAL



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Proprietors: Rank Precision Industries (B.A.F.) Ltd., 1 Aintree Road, Perivale, Greenford, Middlesex (Perivale 7481)

Start a profit-making hire library!

Hiring out Movie-paks is a profitable business too. Easy to run, it requires only a small capital outlay. We shall be glad to advise you how to set up your own library.

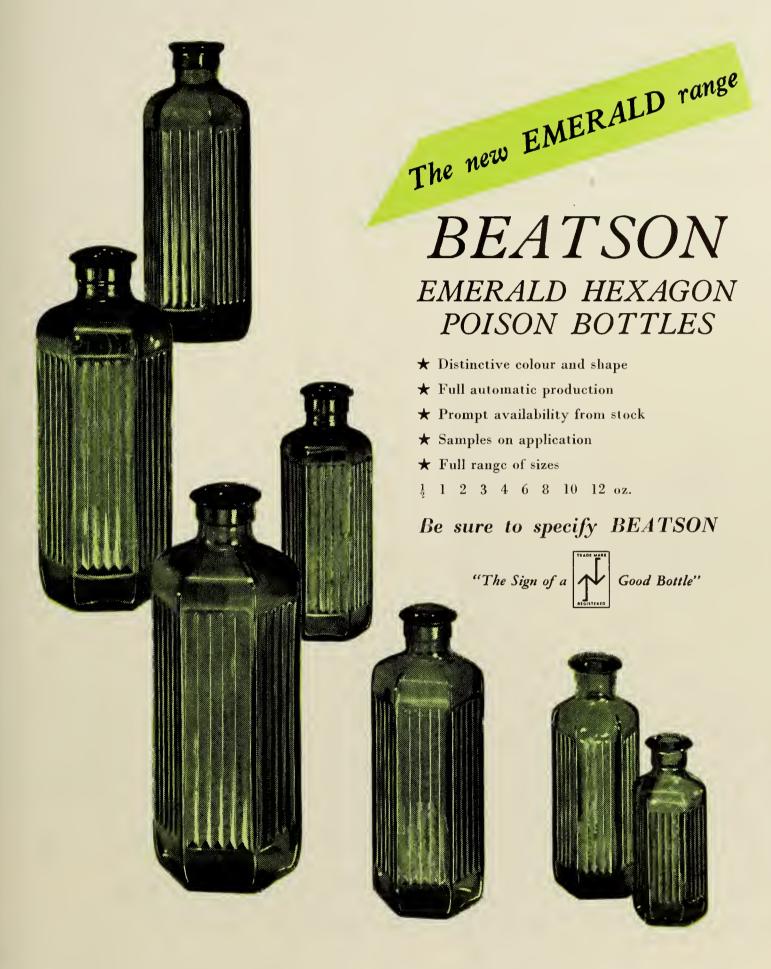
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Please send me a supply of Movie-pak
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CD/20/9/58



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OVER 5,000,000 people

will see Williams

ELECTRIC BLANKET PROMOTION

on -42 times

This season's "DREAMLAND" Sales will be a record! Your share of this greatly increased business is up to you! Take advantage NOW of "Dreamland" T.V. Promotion — which is backed by large "RADIO-TIMES" spaces, Provincial Press campaigns and full-colour point-of-sale promotion material.

BIGGER SALES

ORDER YOUR DREAMLAND

ELECTRIC NOW



The Largest FULL size
2 YEAR

GUARANTEED

Quality Blanket at its price . . .

Single, Size $60'' \times 30''$

£4.0.0 plus P.T. 16/8d.

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£6.0.0 plus P.T. £1.5.0

This is important! DO IT NOW

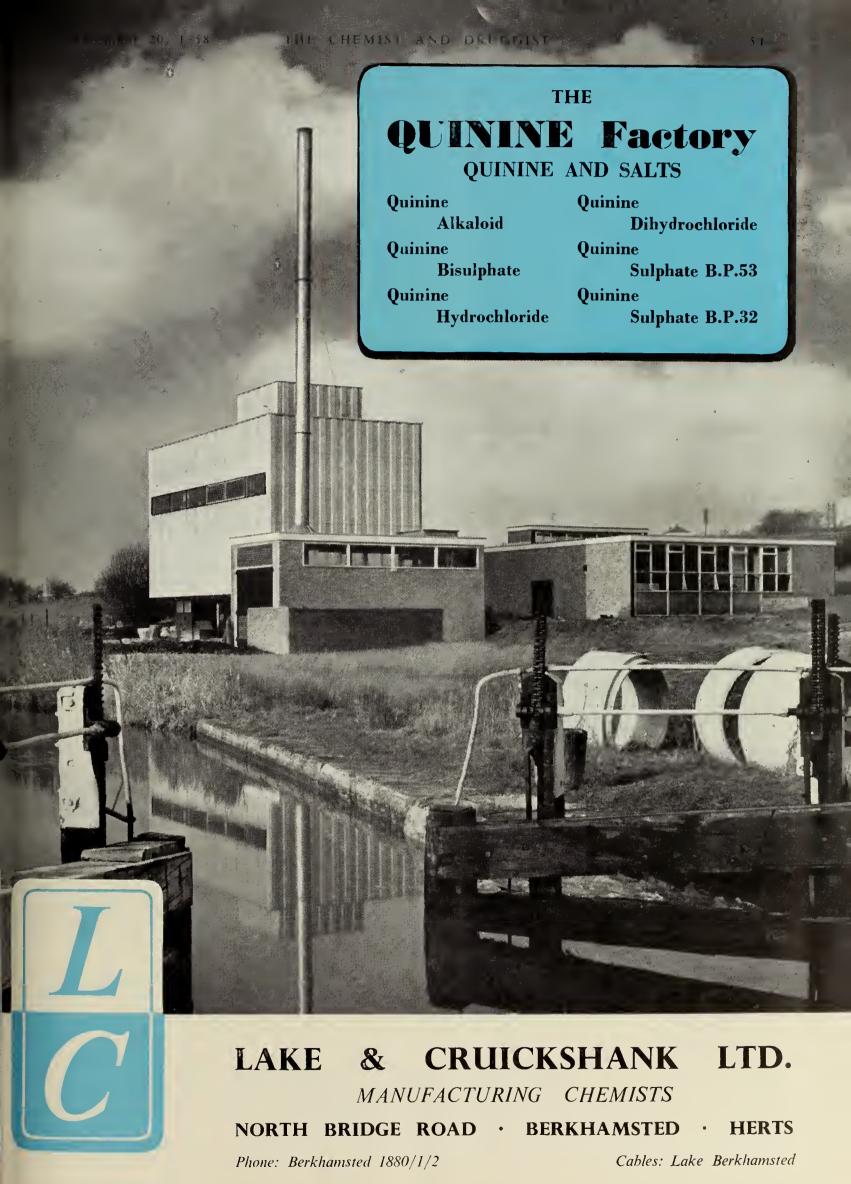
To: EASIPOWER Ltd., 27 Albemarle Street, London, W.I.

Cut out and post this coupon! It brings you by return full details of new, generous discounts on Easipower Products. Either fill in particulars or attach your business letter heading.

NAME

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To N.H.S. Specification

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Attractively Boxed

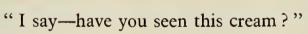
SELF MEASUREMENT FORMS

"MADE TO MEASURE" hosiery, usually despatched same day as receipt of order.

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WOOD, BASTOW (ELASTICS) LTD

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"No—is it any good?"

"It should be-made by COX."

"I thought they were the tablet people."

"So they are, but they make any amount of other lines."

"Really?"

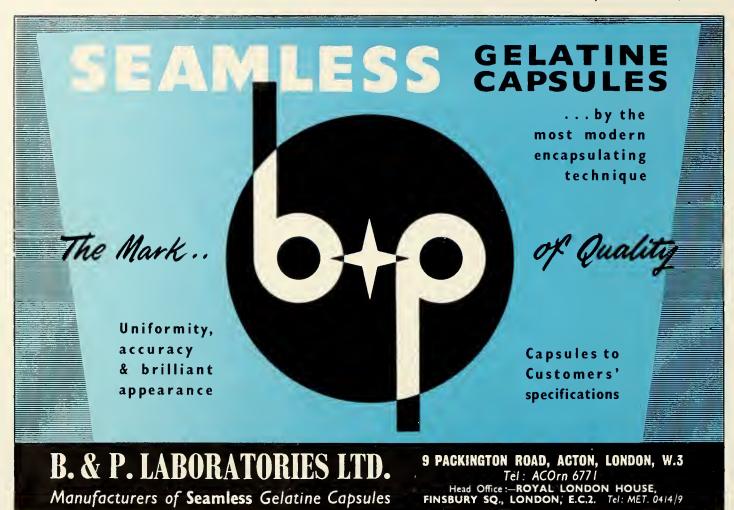
"Oh yes-practically anything pharmaceutical, that is anything of real quality. You see, they've got the organisation—manufacturing, packaging and all that sort of thing—under one roof. Give them a formula and they do the rest."

"They're in Brighton, aren't they?"

"Yes, very old Brighton firm—been in the business over a century, but they have agents all over the world."

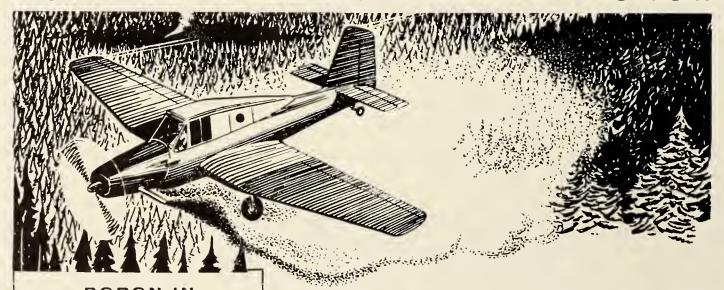


ARTHUR H. COX & CO LTD., **BRIGHTON, ENGLAND**



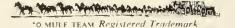
Samples and literature on request

MORE IDEAS BEGIN WITH BORON



BORON IN PHARMACEUTICALS

In the pharmaceutical industry, boric acid has long been acknowledged as one of the safest and gentlest antiseptics available, and is used in many modern tale preparations. In ointments, dressings, eye lotions and similar products, boric acid maintains and extends its traditional place on the pharmacist's shelf.



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Restricting the spread of forest fires by aerial techniques has become ncreasingly important, especially where the use of ground equipment is impracticable. Boron compounds applied from the air isolate spot fires and form chemical firebreaks for the control of established fires. Fire fighting is just one of a wide variety of applications which are being discovered for Boron and its compounds. In nuclear research, rocket fuels and in established fields of industry and pharmacy, the varied properties of Boron and its compounds give rise to many new possibilities. For further information on Boron and its compounds, write to

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A COMPLETE RANGE

of tube closures made from

WOOD FILLED UREA PAPER FILLED UREA

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MATERIALS

is available for customers' individual needs. Each type has its advantages and the original U.M.P. Valve-type wadless closure, (Patented) as the lowest priced of all, has found universal approval.

Below is a view of one of the injection moulding sections of U.M.P's Plastics Division (comprising presses from $\frac{1}{2}$ oz. to 32 oz.) where U.M.P's assortment of

STANDARD POLYTHENE CAPS as well as proprietary caps to customers individual requirements are produced on fully automatic presses.





RIBBON DENTAL CREAM with GARDO

Telephone: PENDLETON ALFORD 6 LANCS. Telephone: PENDLETON 4444LONDON OFFICE: ARGYLE HOUSE, 29/31.EUSTON ROAD. N.W.I. TEL. TERMINUS 2073





67 powerful newspapers with a combined circulation of 7,000,000 carry Ralgex advertisements all the year round.

Ralgex advertisements do a selling Job throughout the country—link your Ralgex display with the constant demand these advertisements create.

Ralgex SOLID embrocation stick is a visual seller. Display Ralgex, add your recommendation, and sales will soar.

Display Nationally advertised 'RALGEX' the only line of its kind

You

get worth-while profit on EVERY SALE!

Pharmax Ltd., Western House, Gravel Hill, Bexleyheath, Kent.

Watch them grow!

'SEAGLOW' sales and profits will really go ahead with these prices

SIZE	RETAIL	DIRECT £3 C/P TERMS
50's	1/11	16/- doz.
100's	3/6	28/6 doz.
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CHEMIST DRUGGIST

The weekly newspaper for pharmacy and all sections of the drug, pharmaceutical and fine chemical, cosmetic, and allied industries

Official organ of the Pharmaceutical Society of Ireland and the Pharmaceutical Society of Northern Ireland

Volume 170

September 20, 1958

No. 4100

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The CHEMIST AND DRUGGIST

Volume 170

SEPTEMBER 20, 1958

No. 4100

Another Conference Ballot

CONTEST FOR EXECUTIVE COMMITTEE

FOR the second year in succession members of the British Pharmaceutical Conference, meeting at Llandudno, September 15-19, were asked to vote in an election for six vacancies on the Conference Executive Committee.

Eight nominations were received for the six vacancies. The situation was exactly the same as last year: the Conference Executive put forward six nominees and two nominations were received from outside. And again the two nominations from outside were those put forward in 1957—Messrs. S. Durham and A. E. Thorpe. The six Executive nominees were Messrs. D. C. Adamson and A. W. Bull, Dr. J. G. Dare, Professor W. H. Linnell, Mr. J. B. Lloyd, and Dr. J. B. Stenlake. Votes had to be placed (in boxes provided) by mid-day, September 17, so that the results could be announced at the closing session of the Conference on September 19.

Technical Education

INDUSTRY'S SUPPORT WANTED

INDUSTRY has been asked to support Government plans to expand and improve technical education. A new pamphlet, "Britain's Future and Technical Education," describes the pattern being followed in the development of technical colleges in England and Wales, and shows how industry and commerce can play their part. In the foreword, Mr. Geoffrey Lloyd (Minister of Education)

says that the £100 millions technical education expansion programme was making rapid progress. Efforts were being made to expand the universities and extend secondary education. The development programme for the technical colleges, the Minister said, needed the backing and support of industry and commerce. "With this help we can be sure of having the right courses for students and teachers. This effort must be made if this country is to have the skilled men it needs."

N.H.S. Prescriptions

JUNE STATISTICS ANALYSED

NATIONAL Health Service prescription forms for England in June amounted to 9:422 millions representing 14:163 million prescriptions. Huntingdonshire showed the lowest prescription average per form at 1:34 contrasting with the highest ratio of 1:61 shown in Wakefield, Wallasey and Warrington. The highest average cost of ingredients per script occurred in West Hartlepool at 76:63d. followed by Cornwall, 76:61d. The average for England was 62:29d. which with fees is raised to 77:10d. The container allowance averaged 1:54d. for the month. For the first six

months of 1958 the monthly average number of forms was 10.509 millions representing 16.022 million prescriptions. The ingredients average cost amounted to 59.11d, per script which in June showed an increase to 62.29d.

Hire Purchase

RELAXATION OF CONTROLS

THE Board of Trade have announced that a wide range of goods has been released from the hire purchase control by the amendment of the Hire Purchase and Credit Sale Agreements (Control) Order, 1957, and the Control of Hiring Order, 1957. The goods affected include industrial plant, lorries and heavy vans, furniture and other items for which a deposit of 20 per cent. was payable. The minimum deposit on all goods still controlled remains at 33\frac{1}{3} per cent., and the maximum repayment period is two years.

Expensive Drugs

DOCTORS' "SPECIAL" PAYMENTS

THE Minister of Health extended, with effect from September 1, the list of specially expensive drugs, reagents and appliances, for the supply of which doctors receive payment over and above their capitation fees. The additions are identical with those for Scotland (C. & D., September 13, p. 262).

Statutory Committee

TWO MEMBERS TO APPEAR

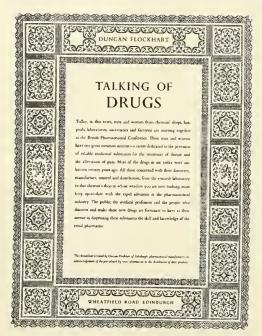
THE Statutory Committee of the Pharmaceutical Society is meeting at 17 Bloomsbury Square, London, W.C.1, at





AT CIVIC RECEPTION: The chairman of Llandudno urban district council, Councillor and Mrs. H. Neville (right) receive Dr. and Mrs. Dare, Leeds, at the civic reception given to delegates of the British Pharmaceutical Conference, Llandudno. At right are Mr. G. Sykes, Nottingham; Professor E. Shotton, London; and Dr. H. Davis, London (a former Conference chairman). (See p. 312.)

2.30 p.m.. on October 1, to consider information that a member of the Society stole a sum of money from his employers and falsified records in an attempt to cover the thefts; and to consider information that a member of the Society stole a sum of money from his employers.



CONFERENCE PUT OVER TO THE PUBLIC: A broadsheet prepared by Duncan, Flockhart & Co., Ltd., Edinburgh, for exhibition in Llandudno pharmacies during Conference week intorns the public that men and women from chemists' shops, hospitals, laboratories, universities and factories, meeting together at the British Pharmaceutical Conference "have one common interest—a career dedicated to the provision of reliable medicinal substances for the treatment of disease and the alleviation of pain." The full text may be read from the illustration with the aid of a reading lens.

SCOTTISH NEWS

A Supermarket Venture

PHARMACY IN SAME BUILDING

IN establishing, on the Abbey View housing estate, Dunfermline, its first "supermarket," Dunfermline Co-operative Society, Ltd., have incorporated



the modern pharmacy illustrated. The reluctance of shopkeepers to open up in new housing estates, principally on account of the problems of staffing, finance and recruitment, has been overcome in Dunfermline by allowing trading organisations to construct their own premises. The Dunfermline "Co-op" erected a two-story building with extended side wings, each containing a

separate self-contained unit, the lefthand one of which is the pharmacy. Flower beds and decorative stonework are part of the scheme, providing a sense of spacious surroundings. The pharmacy is of the "open-vision display" type in accordance with current trends in shop-fitting design. A thirdstory flat is conveniently available for the manager.

IRISH NEWS

THE REPUBLIC

Sulphadimidine Sale

UNQUALIFIED DEALER FINED

AT Thurles, co. Tipperary, court. recently, Joseph Murphy, Littleton, was charged with sclling sulphadimidine tablets when not legally qualified to do so. contrary to Section 30 of the Pharmacy Act and with selling tablets to a person unknown to him and without having on the wrapper, the word "poison" and the name of the article plus the name and address of the seller. Defendant was fined £7 with costs, Mr. J. J. Gaynor, for the Pharmaceutical Society of Ireland, said that an inspector of the Society (Mr. P. S. O'Brien) purchased six tablets from an assistant on May 9. Each tablet contained 4.82 gm, sulphadimidine and should only be sold by a licensed apothecary; druggist or pharmaceutical chemist. The maximum dosc of the poison for a human being was 4 gm. whereas each tablet contained almost 5 gm. The tablets themselves were rather like sweets and therefore particularly dangerous if left lying about where there would be children. They would have a serious effect on a child, two quite possibly being fatal. The tablets were intended for cattle; tablets for humans would contain only 2 cm. of the poison. Another tain only 2 gm. of the poison. Another point was that the six tablets cost 9s.; if bought in a chemist shop, they would cost 6s. 3d. When defending solicitor described the tablets as "the Aspro of the veterinary world," Mr. Gaynor said —I don't think so at all; they are a dangerous drug. Asked by the Justice where the tablets came from defence said: "That is the point and the real culpability is on the presumably quali-fied person or source responsible for their distribution.'

Justice: If a child ate one of these tablets, it would die, or be seriously ill. At the very minimum those containers ought to be marked "poison." Defending solicitor said the same applied to weed killers, etc., which could be "bought in establishments that were probably not entitled to stock them at all." Never again, he added, would the Society be troubled with an investigation of that kind so far as his client was concerned." The Justice said he would very much like to know who supplied the tablets because they were the ones who should be prosecuted; they did it with their eyes open.

Surgical Dressings

CUSTOMS DUTY AMENDED

FROM September 1 imports of bandages, medical and surgical dressings and lint from the United Kingdom and

Canada are charged with an import duty of 33½ per cent, ad valorem. The full rate of duty applying to other countries is 50 per cent. The Order (Imposition of Duties (No. 39) (Bandages and Bandaging Material) Order, 1958), made by the Irish Republic Revenue Commissioners, terminates the previous customs duty on cotton bandages and bandaging material (Tariff Ref. No. 15) and amends the duty on cotton wool, etc.

THE NORTH

Associates' Section

MONTHLY COMMITTEE MEETING

THE September meeting of the committee of the Associates' Section, Ulster Chemists' Association, was held in Belfast, on September 8. In connection with previous correspondence with the Northern Ireland Development Council regarding the possibility of pharmaceutical companies commencing manufacturc in Northern Ireland (see C. & D.. June 21, p. 652), it was agreed to write to the American Consulate General asking if any American companies were likely to be interested. A report of a social subcommittee meeting held on July 24 was received from which it was noted that it was hoped to hold the usual annual hallowe'en dance. Preliminary arrangements were made for the annual meeting, for which the draft annual report and balance sheet wcre approved. It was agreed to ask the Pharmaceutical Society of Northern Ireland for the use of their main hall on November 6 for the meeting. The following members are due to retire from the committee: Ph.C. Representa-Home the committee: Ph.C. Representa-tives, Messrs. W. E. Cooper, H. M. Hamilton, W. T. Hunter, J. E. Morley, J. M. McC. Thompson; Student Repre-sentatives, Messrs. E. A. Baird, S. Wright. Mr. R. J. Scott who was also due to retire has resigned from the committee and Mr. N. Appleton has re-signed on taking up an appointment in signed on taking up an appointment in England. Messrs. E. A. Baird and S. Wright qualified as pharmacists during their term of office but are eligible to stand as Ph.C. representatives. There are, therefore, four vacancies for student representatives. The chairman (Mr. W. T. Hunter) asked Mr. R. J. Davidson to present a gift to Mr. H. M. Hamilton to mark the occasion of his forthcoming marriage. Mr. Hamilton suitably replied. The following were approved for associateship:—Pharmaceutical Chemist, Messrs. A. Mulvey. R. J. Picken, V. E. Reaney; Apprentice, Messrs. F. X. Hinds, P. T. McGeough.

Council Unchanged

NO ELECTION NECESSARY

WHEN nominations closed on September 15 for the seven seats on the Council of the Pharmaceutical Society of Northern Ireland, the only nominations were those of the retiring members. The following pharmaceutical members are therefore returned, unopposed: Messrs, G. E. McIlhagger, W. C. Tate, S. E. Campbell, J. Kerr, A. Templeton and H. G. Campbell. Mr. R. M. Watson, the retiring registered druggists' representative, was also returned unopposed.

Health Services

RE-APPOINTMENTS THE RULE

THE Ministry of Health and Local Government has announced the re-appointment of the three pharmaceutical representatives on the Northern Ireland General Health Services Board as from October 1 next, They are:—Messrs. W. H. Boyd, M.P.S.N.I., Robert Gibson, O.B.E., M.P.S.N.I., and Hugh G. Campbell, M.P.S.N.I. Mr. Alexander Templeton, a member of the Council of the Pharmaceutical Society of Northern Ireland, has been re-appointed a member of the Northern Ireland Hospitals Authority.

IRISH BREVITIES

THE NORTH

NORTHERN Ireland General Health Services Board has removed to 27 Adelaide Street, Belfast.

NEWS IN BRIEF

CAMERAS worth £500 were stolen from the Buttermarket Street, Warrington, premises of Timothy Whites & Taylors, Ltd., on September 10.

THE Traders' Road Transport Association is preparing the details of a campaign, to commence on October 20, aimed to cut down, in the London traffic area, the waiting time of commercial vehicles in busy thoroughfares.

MANY pharmacists attending the International Federation of Pharmacy Congress visited the Brussels Universal Exhibition where they saw The Chemist and Druggist in the centre of a display of technical papers on the bookstall opposite the pavilion of British industries.

A COLLECTION of prints by Rembrandt, Lautrec, Goya, Daumier, Munch and other artists, depicting the practice of medicine through the ages, is to be shown at the London nursing exhibition at Seymour Hall, Seymour Place, London, W.1, on October 13–17.

SPORT

Cricket.—Brylcreem cricket cup awards, 1958, Stammore, Middlesex, were: The 1958 cricket cups with 100-guineas, to Mr. F. R. Brown, M.C.C. team manager: for the fastest century of the season to C. Ingleby-Mackenzie, captain of Hampshire; for most wickets taken in a single innings, P. Loader (Surrey); for highest number of catches to M. J. Stewart (Surrey); for highest aggregate of victims (wicket-keeping) T. Murray (Middlesex); a special award for the year's outstanding performance not covered by the above, D. Shackleton (Hampshire); the visitor's award for the most outstanding performance by a member of the touring visiting this country, J. Reid (captain, New Zealand touring team). The gold cuff links were land touring team). The gold cuff links were awarded to: The player making the fastest hundred during May and the player with the best bowling performance in the month; as the batting and bowling performances of May were improved upon those players also received gold cuff links. Also at the end of June, July and August, the players with highest aggregate and August, the players with highest aggregate of victims behind the wicket, and highest catches in the field received the cuff link awards, For batting: C. Ingleby-Mackenzie (Hampshire), J. Reid (New Zealand touring team), C. Ingleby-Mackenzie (Hampshire); for bowling; P. Loader (Surrey); for fielding: A. Oakman (Sussex); for wicket-keeping: J. T. Murray (Middlesex), wicket-keeping: E. C. Petrie (New Zealand).

TOPICAL REFLECTIONS

By Xrayser

Trade Signs

The Welsh pharmacist who has demonstrated that he possesses a veneration for tradition by erecting a handsome, outsize mortar and pestle sign, has added distinction and dignity to his pharmacy (p. 277). In an age when increasing use is being made of brightly lit and brightly coloured devices, it is particularly pleasing to see such a well-proportioned specimen of the emblem which, though sometimes seen elsewhere, is so frequently met in Scotland. The illustration caused me to reflect, by no means for the first time, on the gradual disappearance from our streets of the traditional trade signs which were once an accepted part of the scene. I have referred previously to the large highlander who stood above a tobacconist's premises in the Strand, and there were also the head of a negro boy, with dangling cigarette, and that of a turbanned Moor, both indicative of the presence within of the tobacco blender. And there comes back to me the warm, aromatic and appetising fragrance which was wafted from such shops—a fragrance which has deserted the shop for the factory, for there can be no aroma from vacuum-sealed tins stacked on a shelf. I have also had occasion to refer to the midshipman gazing with rapt concentration into a sextant, and one knew instinctively that the goods for sale within had no practical application for those whose travels were confined to escalators leading to the Underground. Other signs, such as a gigantic pair of spectacles or a pocket watch suitable only for a Goliath, told their own story, and it was not unusual to find an open razor, of a size appropriate for the giant in pantomime, or a pair of scissors, to indicate the presence of a cutler.

Need for Preservation

Many of your older readers could add to the signs mentioned above. A fish, resembling in size "the one that got away," might serve to proclaim either a fishmonger or a dealer in fishing rods, baskets and flies, so that the city dweller, attired in bowler hat and striped trousers, might be seen, to the danger of the lieges, "casting" a tightly-rolled umbrella on the busy thoroughfare of Kingsway while his mind travelled to the limpid streams on Dartmoor or the swiftly moving rivers in the highlands. And, strangely, there seemed to be nothing incongruous in seeking a pair of "working boots beneath a sign which suggested that the business within was exclusively "county" to judge from the aristocratic riding boot above the entrance. Others which come to mind are the circular saw—not at a sawmill, but at the sawmaker's; the barber's pole and, occasionally, a prancing steed on the top of a gaslamp, to locate the veterinary surgeon. Is anything being done by local authorities to record such signs before it is too late? They are quickly vanishing, and it would be a great pity if nothing was done to keep some account of an extremely interesting subject. It might be possible to acquire a few such signs for a local museum, but if a photographic record is desired there is little time to spare. Incidentally, I wonder at what time the mortar and pestle sign became popular in Scotland? Lord Cockburn, in Memorials of his time, records that Dr. Cullen died in 1790, and that he (Cockburn) "only learned his looks from the number of heads of him which, out of respect to his memory, were instantly set up as signs for druggists' shops.

Winter Recreation

The page of information (p. 272) relating to educational courses is an indication of the facilities made available to those seeking either pastures new or mere refreshment. I note with pleasure, though without surprise, that the Croydon Branch of the Pharmaceutical Society have arrangements in hand for a further series of lectures. The success attending the efforts of the organisers must be reward indeed for their enterprise. I note that the British Pharmacopæia for 1958 figures in the syllabus, and there is also a most useful up-to-date covering of forensic pharmacy. I have little doubt that the course will again receive the enthusiastic and appreciative support which the organisers deserve.

INTERNATIONAL PHARMACEUTICAL FEDERATION

I.P.F. General Assembly

BUSINESS SESSION

SIR HUGH LINSTEAD briefly dealt with the future development of the Inter-national Pharmaceutical Federation saying it was intended to use the general assembly to a minimum for formal business. Plans were being developed for the future which would no doubt result in the Congress going forward on two wings-the scientific and the practical, and he hoped that at Copenhagen in 1960 the general assembly would be given the opportunity of discussing the many problems of practical pharmacy. However, the current Congress had to deal with the old form of agenda. After dealing with the previous minutes of the last council meeting he ealled upon Professor Ruyssen to present the report of the Scientific Section. Professor Ruyssen, Belgium, reviewed the subjects which had been chosen for the symposium—the applications of radioisotopes, chromatography, biometry, and then referred to the meeting which had been arranged with the press and documentary sec-tion on the problem of preparing abstracts for international use.

adoption of a standard form of scientifie memorandum which the International Pharmaceutical Federation should attempt to get accepted in all countries where registration was in-

sisted upon.

The military pharmacists' section under the chairmanship of Lt. Col. Alm, Sweden, reported that it had forged close links with thirty-five nations, but in the military field the officers changed and continuity was difficult, therefore, it had been decided to create a permanent secretariat. Questionnaires had been sent out and the speaker was pleased to inform the Congress that in spite of the problems of military secrets a number of governments had made available statistical information concerning their pharmaceutical Services. A report had been prepared which indicated the advantages of certain different activities and he hoped

using the pharmaceutical personnel in that the report would help his col-leagues whose governments did not provide the pharmacist with opportun-ity for service in his professional

Sir Hugh Linstead and Mr. Etienne at the opening of the historical pharmacy exhibition held at the International Pharmaceutical Federation Congress at Brussels.

The Report of the Hospital Pharmacists Section was presented by Pro-fessor Cheymol, France, who stated that eleven reports had been received from various countries concerning the civil responsibility of hospital pharmacists, and these would be considered by the section. He felt that the reports should, if possible, be included in the *Journal Mondial de Pharmacie*, so that they would not be lost but kept in the future.

Mr. C. W. Robinson, Great Britain, the chairman of the pharmacists in the Industry section, reported that the section was endeavouring to remain in-dependent of all the other bodies by being self-supporting. It would deal with a report on the unification of the labelling of poisons, and a report prepared by a sub-committee after surveying the main requirements for the control and registering of proprietary medicines in various countries. The sub-committee had recommended the capacity. Some work has also been done on the unification of a single international military formula.

The press and documentation section report was submitted by Dr. Don E. Franke who stated the section had discussed three important subjects, the responsibility of the editor of a pharmaceutical journal, drug information and its sources, and the problem of abstracts.

During the afternoon session Sir Hugh Linstead stated that it had been decided to reappoint all the Commissions except the Commission on vitamins which would be absorbed in the scientific section. When discussing the Bulletin of the International Pharmaceutical Federation the president referred to its greatly changed form and text and expressed thanks to Mr. Degand for the work which he had done. Sir Hugh pleaded that all members should give M. Degand as much support as possible and he asked that support as possible and he asked that

the individual national organisations and societies should send in any reports on new laws, new scientific developments and details of any changes concerning the practice of pharmacy. He also asked the local societies to obtain advertisements for the journal in order to assist with the financial problems. Mr. Degand appealed to the chairmen of all sections to prepare statements which although it might not be possible to produce them in all languages in the journal he would at least try to include the summaries in the three standard International Pharmaceutical Federation languages.

Item number eight on the agenda was the Treasurer's report which indicated the financial situation had elearly improved. Sir Hugh Linstead thought that it had been a good year but emphasised that the Federation did not exist to collect money. He hoped that more money would be spent on the scientific section or the commission for the practice of retail pharmacy. Sir Hugh recommended that the budget for 1959 be on the same provisions as in 1958 but because finances were better, if the individual sections considered better documentation would assist in the carrying out of their work then the Committee would consider making an additional allocation. The next item eonsidered by the Congress con-cerned the regulations for the award of the Host Madsen medal but because of definite difference of opinions within the Congress it was decided after some discussion to postpone the final decision.

Professor Van Os then reported that Sir Hugh Linstead's term of presideney had come to an end, he had done his work in an excellent manner and in the name of the Dutch repre-sentatives he asked Sir Hugh to agree to serve a second term of four years. Replying, Sir Hugh said he had thought carefully about the invitation—he did not think it was healthy for an organisation to have somebody in office too long, but because of the develop-ment of the Federation—"if you wish me to do so, I shall be prepared to serve you for that further period.' Assembly unanimously agreed to Sir Hugh being president for a further term.

Sir Hugh then announced that Professor Van Os had indicated he wished to retire and the Council had recom-mended he should be given the title— 'Membre d'honneur de la F.I.P.' D. Birza also wished to give up the office of Secrétaire Général and Sir Hugh proposed that he should be appointed to the vice-presidency vacated by Prof. Van Os. It was also proposed that Van Os. It was also proposed that Dr. J. Winters, Holland, should be the new Secrétaire Général, and Dr. Don E. Franke, U.S.A., should be appointed a Vice-President. All the proposals were adopted unanimously.

Sir Hugh then discussed the statutes

for the award of the Höst-Madsen Medal and stated the Council felt that the question should be considered in Madrid and then a report prepared for the Congress in Copenhagen.

The remaining items consisted of the revision of the rules of the scientific section, the admission of members, an application for the reduction of 1959 membership, and the invitations for future meetings of the International Pharmaceutical Federation.

Second Session

At the second session of the General Assembly the president called upon M. Arnal to present to the Congress the report of the Commission on Retail Pharmacy. M. Arnal began by stating that pharmacists were men of two worlds—art and science—and they still remained so in spite of the evolution of specialisation. If, however, the evocontinued unchecked, some might foresee a future when the pharmacist would only know the relevant prices of standard medicines. But the dispensing pharmacist gave something more than a simple service—he de-clared: "What counts when illness is at your door?" . . . "All who suffer should find a helping hand . . and a compassionate heart." This was the type of social service of which our customers were aware, though they may sometimes forget. He said it was this social service which all pharmacists should bear in mind whether they worked in a dispensary or laboratory.

After M. Lesure had also spoken on

the report, Professor Gouball, Belgium, wanted to include in the suggested code a reference that pharmacists must

keep up to date.

M. Willund, Sweden, considered it was impossible to take any decision then. He wanted more opportunity to study the report, and he suggested that the Council should have considered the report and then have made a recommendation to the general assembly. In reply, Mr. Arnal indicated the report was for guidance—it represented a line of conduct for the various associations for them to keep in mind to ensure uniformity. He hoped that one day pharmacists of all countries would cooperate better to understand each other. Mr. Willund stated he would other. Mr. Willund stated he would accept but not adopt the report and this was the general attitude of the Congress.

Closing Session

Sir Hugh Linstead was again in the chair for the afternoon session and he first called upon Professor K. Steiger (Switzerland) to give his report on Education in the Pharmaceutical Industry, whose first point was that education of an individual was only one part of the story. What should be attained was education of character, otherwise the result was a dumb personality—a robot of science. The pharmacist was responsible to his profession as well as to the patient. He must know the materials he handled - the packing, the containers, the chemicals, the packing techniques. He must know the action of the medicines, their administration and utilisation. The average period of study was about four or five years. The professor then pro-

vided statistical information which had been gathered from replies to nearly four hundred questionnaires. His main conclusion was that it was diffi-cult to find items which could be cut from the subjects now being taught to

pharmaceutical students.

The standard of any course of education for pharmacy should be high so that the art of pharmacy could be

developed freely.

The scientific section then proposed the adoption of certain recommendations concerning the subjects which should be included in the educational programme of a student-pharmacist.

During the debate which followed, Dr. Krauze, Poland, wanted toxicology introduced in all educational schemes, because pharmacists must work in their laboratories as technologists. Gaudin, France, suggested there should be a definite distinction between the medical and pharmaceutical fields of activity and he wanted to use the term biological analysis. Professor Ruyssen objected to this suggestion because clinical analysis was a term well understood and used in the inter-

national field.

Mr. J. Bruggeman, Belgium, stated that recommendations of the Scientific Section concerned an extremely important problem in pharmacy and as the representative of the Belgian delegation he proposed that the discussion should be suspended. Mcmbers should have the text of the document before them so that it could be studied before giving any decision. The President said that the main difficulty was a fundamental problem of procedure. He considered it would be often impossible for the general assembly to accept as its own the reports prepared for the assembly. It could not in assembly hope to edit or change details and he hoped that some way could be found to adopt a new procedure which would avoid such difficulties. Meanwhile he asked the Belgian pharmacists to withdraw their proposals. Mr. Bruggeman twice later in the debate defended the Belgian attitude stating it was only the scientific section that knew about the report but others were being asked to vote on it. Winters, Holland, agreed with the Belgian viewpoint, believing that it was wise and valid since it was difficult to decide on a report which had not been seen. Mr. C. W. Robinson, Great Britain, appealed to Professors Ruyssen and Steiger to accept deferment of the discussion, but Professor Ruyssen wanted a definite decision. Sir Hugh Linstead stated he wished to avoid a detailed discussion in Copenhagen.

A vote was taken which resulted in the rejection of the proposal by a majority of eight votes. When he announced this the President added-the proposal was lost on a question of procedure-it was not a vote on the content of the recommendations.

Professor Stainer, Belgium, in giving the report of the secretaries of the pharmacopæia committees said that representatives from fifteen countries had been considering the introduction of common titles for new medicaments.

Mr. P. Degand reported that the In-

ternational Commission of Speciality had been investigating the use and con-

trol of colouring in medical products and they recommended the adoption and use of a limited list of authorised colouring agents. During his closing speech Sir Hugh Linstead announced he had received messages of greeting from pharmaceutical organisations in Canada, Germany, Italy and Turkey. After expressing his grateful thanks to all who had made the Congress so successful—to the chairmen and secretaries of all sections who had made the life of the President tolerable; to Mr. Stoffels and all his Belgian colleagues, and the organising committee, who had been responsible for much of the detailed planning. Sir Hugh then referred to the very pleasant custom which had been made possible by Mr. Donald Ross, a Canadian, who had given a sum of money to recall in perpetuity the gathering of many nations in amitié. It enabled the purchase of two books in which had been placed bookplates stating-"The volume commemorates the meeting of the Federation Internationale Pharmaceutique held in Brussels 1958." He then called upon M. Stoffels, President of the Belgian Pharmaceutical Association, to receive the books.

Before saying "goodbye to all," Sir Hugh said that they had met as pharmacists belonging to many countries, he hoped that "we have not been particularly Polish or Indian. . . ." He hoped they had not insisted on being pharmacists who teach or manufacture . . . but just pharmacists. That was why they were there. "So in that spirit I say goodbye and hope we shall meet

together in two years in Copenhagen."
For opening session see C. & D.,
September 13, p. 264.

OVERSEAS NEWS

DOMINICAN REPUBLIC

Campaign Against Malaria

THE Ministry of Health and Social Welfare in the Dominican Republic has announced that it proposes to initiate a campaign against malaria at a cost of RD. \$2,689,899. The co-operation of U.N.I.C.E.F. has been obtained for the supply of some vehicles and insecticides for the campaign. The Pan American Sanitary Bureau is also to give some assistance.

AUSTRALIA

Victoria State Laws Amended

THE Pharmacy Board of Victoria, in its eighty-first annual report for 1957 records amendments made during the year to the Pharmacy Regulations. Among them is a provision requiring pharmaceutical chemist carries on business to display his name prominently on his business premises. That has not been compulsory in the past, except when a pharmacy has been conducted under a trade name. Dangerous Drugs Regulations were amended "to make the provisions relating to the prescribing and dispensing of Dangerous Drugs more workable, whilst preserving safeguards against misuse. Provision is made for a chemist to dispense a prescription which he knows to be genuine, but which lacking in some minor technical detail.

COMPANY NEWS

ORTHO PHARMACEUTICAL LTD.—Mr. J. G. Jones (general sales manager) has been appointed sales director. Mr. William Hedley (assistant secretary) has been appointed company secretary.

GENATOSAN, LTD.— Mr. P. S. Needham has been appointed joint managing director and will control the marketing and sales divisions of the company, and will take executive charge of Fisons Milk Products, Ltd.

ASHE CHEMICAL, LTD.—At a meeting of the company on September 11. shareholders adopted the new article which empowers the board between September 15 and October 1 to sell at current market prices holdings of less than fifty shares for the benefit of those holders (see C. & D., August 23, p. 186).

SANGERS. LTD.—Group profit for year to February 28, was £507,956 (£465,643), before tax of £280,622 (£272,603) and dividend 30 per cent. (same). Fixed assets, £1,411.135 (£1,244,660). Investments, £213,745 (£137,598). Current assets, £4.617,760 (£4.536,289), including cash £144,084 (£239.690). Current liabilities £3,421,455 (£3,208,650). Reserves, £1,427.928 (£1,333,093).

SMITH & NEPHEW ASSOCIATED COMPANIES, LTD.—Group turnover for the half-year ended June 30 is some 5 per cent. higher than for the same period of last year, including in both cases the sales of Southalls and Bertons, both of which companies were acquired earlier this year. But the board warn that the general indications are that the current half-year will show a lower profit than the first. Estimated group profits before tax for the second quarter was £510,000, making a total for the half-year of £1,050,000, the results being much influenced by the merger. That represents a 14 per cent. increase over the combined earnings of the three merged companies. About £68,000 has to be set aside as preacquisition 1958 profits of Southalls and Bertons.

New Companies

P.C. = Private Company; R.O. = Registered Office

CLIFFORD-JONES (CHEMISTS), LTD. (P.C.).—Capital £100. To carry on the business of wholesale and retail chemists, ctc. Directors: Sidney Clifford Jones. M.P.S., and Elsie Clifford Jones. R.O.: 11 Onslow Road, Richmond, Surrey.

ALFRED GREEN (PHARMA-CIES), LTD. (P.C.).—Capital £1,000. To carry on the business of chemists. druggists. etc. Directors: Alfred Green, M.P.S., and Margaret N. Green. R.O.: 66 Lower Richmond Road, London, S.W.15.

PROVOST (CHEMISTS), LTD. (P.C.).—Capital £3.000. To acquire the business of a chemist carried on by D H. Provost at Walsall, etc. Directors: George E. Provost, Linda G. Provost and Donald H. Provost, M.P.S. R.O.: 208 Stafford Street, Walsall.

A. R. WINSHIP, LTD. (P.C.). — Capital £1.000. To carry on the busi-

ness of wholesale and retail chemists, druggists, etc. Directors: Arthur R. Winship, M.P.S.. and Hilda G. Winship. R.O.: 112 Charminster Road, Bournemouth.

G. HORTON, LTD. (P.C.).—Capital £15,000. To carry on the business of wholesale and retail pharmaceutical and veterinary chemists and druggists, etc. Directors: Edward C, Clark, Eileen Clark and Joseph H, Elliott, M.P.S. R.O.: 7 Market Place, Cirencester. Glos.

VELFORD PHARMACEUTICAL CO., LTD. (P.C.).—Capital £100. To carry on the business of manufacturing. dispensing and analytical chemists and druggists. etc. Directors: Mark Usden. M.P.S., and Anthony D. Lever. F.P.S. R.O.: 207 Corn Exchange Buildings. Cathedral Street, Manchester, 4.

F. R. ASHURST, LTD. (P.C.). — Capital £1,000. To acquire the business of a retail chemist carried on by Eleanor M. Ashurst at 215 Worsley Road. Swinton, Lancs, etc. Directors: Geoffrey Ashurst, Eleanor M. Ashurst, Valerie Ashurst and Barbara Palmer, M.P.S. Solicitors: Kirk, Jackson & Co. Swinton

UPJOHN INTERNATIONAL OP-ERATIONS, INC., in collaboration with Societe Industrielle Pour La Fabrication des Antibiotiques (S.I.F.A.) have formed two French companies: Union Chimique Atlantique, S.A. and Laboratoires Upjohn S.A.R.L., 63 Boulevard Haussmann, Paris. Mr. Jean Bengué has been appointed president and general manager.

M. BEETHAM & SON, LTD. (P.C.).
—Capital £100. To acquire the business of manufacturing chemists and cosmeticians carried on by United Chemists' Association. Ltd.. at Ucal Works, Cheltenham, as M. Beetham & Son, etc. Directors: Frank L. Dent, M.P.S., Joseph L. Goulder, M.P.S., 90 Promenade, Cheltenham, William T. Haigh. M.P.S., Bertram J. Browning, M.P.S., and John R. Gale, M.P.S. (all directors of United Chemists' Association, Ltd., etc.). R.O.: Priory Court, London Road, Cheltenham, Glos.

BUSINESS CHANGES

MR. H. T. BARNETT, M.P.S., formerly of Sunnyside, Wheelock Road, Haslington, Crewe, has taken over the pharmacy of Mr. J. Hall. F.P.S., 21 High Street, Sandbach. Ches.

J. ALLEN (agent for Thomas Marns, Ltd., and Pretested Products, Ltd., in Lancashire and Yorkshire) has removed to 33A Burlington Road. Blackpool, Lancs.

PREMISES at 8 High Street, Chipping Norton, Oxon, which have been used as a chemist's shop for over 150 years, have been sold by private treaty and are no longer registered as a pharmacy. The shop was owned and occupied by the late Mr. Fred Pearce for the past fifty years.

THE executive and sales organisations of Whiffen & Sons, Ltd., have been transferred to their Loughborough factory; all inquiries and correspondence should now be addressed to Willows Works, Derby Road. Lough-

borough, Leicestershire. The publicity and advertising department is to remain at Fison House, 95 Wigmore Street, London, W.1. It will still be possible to contact members of the sales organisation through Fison House.

Appointments

UNITED CHEMISTS ASSOCIATION, LTD.. Ucal Works, Cheltenham. Glos, have appointed Mr. M. W. Hewett their representative in Middlesex, West London, North-west and part of North London and Mr. A. Watts representative in Hertfordshire, Norfolk, Suffolk, Essex, East London and part of North London.

OVERSEAS VISITS

MR. OLIVER GREGORY (export sales manager, Griffin & George (Sales). Ltd.). who earlier this year toured the middle European countries, left by air for the northern countries on September 8. During his fourweeks' visit, he will call on the group's agents in Germany, Denmark, Finland, Sweden and Norway.

MR. W. M. BROWNLIE. B.Sc., M.R.C.V.S. (head of the veterinary science division of the research department) and Mr. E. W. G. Crouch, N.D.A. (agricultural marketing manager of the international division, Boots Pure Drug Co., Ltd.), Nottingham, are spending several weeks visiting the Sudan, Kenya, Tanganyika, Uganda, Northern and Southern Rhodesia, Nyasaland, South Africa, Nigeria, Bechuanaland, the Belgian Congo and Ghana. They will see veterinary officers and agricultural departments in those territories.

MARRIAGES

BRICE—DAVIES.—At St. Margaret's Church, Thornbury, Bradford. on September 13, Mr. G. Brice, Fagley, Bradford, to Miss J. Davies, M.P.S., Poplar Road, Great Horton, Bradford. Both attended the Bradford Institute of Technology.

McGRAIL—TURNBULL.—At Timperley, Ches, on September 8, Mr. M. A. McGrail, M.P.S., to Miss M. M. Turnbull, Timperley. Mr. McGrail is manager of Hartleys Chemists, Ltd., 59 St. James Street, Burnley, Lancs.

SHARP—WORMALD.—At Headingley Methodist Church, Leeds, on September 6, Geoffrey William Graham Sharp, F.P.S.. Alderson Drive, Doncaster, Yorks, to Jane M. O. Wormald, Armley Grange Drive, Leeds. Mr. Sharp is a lecturer in pharmacology at Leeds University.

DEATHS

BAYNE. — On September 1. Mr. James William Bayne, M.P.S., Obon, Athelstone Gardens, Wickford, Essex. Mr. Bayne qualified in 1907.

FIELDING.—On July 31, Miss Christinc Fielding, M.P.S., 16 Westfield Road, Cottingham, Hull. Miss Fielding qualified in 1952.

WALKDEN.—On July 31, Mr. Charles Walkden, M.P.S., 51 Cornwall Road, Fclixstowe, Suffolk, aged sixty-seven.

PERSONALITIES

MR. THORNTON HIRST, M.P.S., Highcroft, Owlcotes Lane, Pudsey, celebrated his eightieth birthday on September 11. Mr. Hirst is managing director of F. M. Rimmington & Sons. Ltd., Bridge Street and Manningham Lane, Bradford, and, after fifty years in the profession and still working, he is one of the oldest pharmacists in the district, Born in Stainland, near Halifax, Mr. Hirst joined Rimmington's in 1907, prior to which he had been with Savory & Moore, Ltd., London,

DR. E. F. HERSANT. B.Pharm.. Ph.D., F.R.I.C., F.P.S. (chief analyst,

May & Baker, Ltd., Dagenham, since July 1933). was recently awara gold watch to celebrate his twenty-five years of service with the organisa-tion. Widely known for his work on com-mittees of the British Pharmacopœia a n d



British Pharmacetuical Codex, Dr. Hersant is one of the joint secretaries of the British Phamaceutical Conference.

MR. J. HALL, F.P.S., The Bungalow, Vicarage Lane, Elworth, Ches, has retired after forty years in business at 21 High Street, Sandbach, Ches. Mr. Hall is a native of the Sandbach district and after winning a foundation scholarship to Sandbach school studied pharmacy, qualifying in 1913. After experience, first as assistant and later as manager in Fleetwood, Didsbury and Crewe, he opened his business in Sandbach. The pharmacy was remarkable for its old style, retaining the traditional carboys in a prominent position. Mr. Hall also qualified as an optician. His retirement stimulated an appreciation of his services in the Crewe Chronicle.

MISS ULIAN KHOO, a Hong Kong pharmacist, who is in Britain on a nine months' mission to study the organisation and equipment of a hospital pharmacy department, is chief pharmacist at the 600-bed Queen Mary Hospital, Hong Kong. When she returns, via the United States, where she will visit important American hospitals, she will be called upon to advise in the creation of a 1,000-bed hospital to be established at Kowloon. Miss Khoo was born in Singapore, but studied and qualified in Hong Kong. During the war she gained valuable experience in American military hospitals in nationalist China. In Britain she has visited a score of hospitals in London, as well as hospitals in Scotland and the provinces, and has also been shown round the works of leading British pharmaceutical manufacturers. She attended the Brussels congress of the International Pharmaceutical Federation and is one of a number of overseas pharmacists at the Llandudno meeting of the British Pharmaceutical Conference.

LEGAL REPORTS

Illegal Possession of Indian Hemp

EIGHT West Africans gaoled at Clerkenwell, London, on September 11, on charges of possessing quantities of Indian hemp denied that any hemp was found on them. One of them said it had been "planted" on them by the police. The magistrate commented: do not think it was a police conspiracy at all. I am satisfied that if this was a plant some of these officers would have dropped it and would have said, I am not going to be a party to this Police officers said hemp was found on the accused persons or behind seats they occupied in a police van after arrest. The sentences were: Angus Ade Basorun, Tavistock Street, Bloomsbury. months' imprisonment; Amy Clarke Dno-Okoro. Agar Grove. St. Pancras, two months; Jonathan John, Malden Road, Kentish Town, Laguda Solomon, Newington Green Road, Islington, Billy Olu Sholanke, Lambeth Street, Stepney, and Tesi Bello, Newington Green Road, Islington, three months each; Samuel Cofie, Highbury Hill, six months; and Sam Browne. Agar Grove, St. Pancras. twelve months.

Pethidine for Own Use

Dr. Marcus Gershon Lucas, Stratford Road. Shirley, Birmingham, pleaded guilty at Solihull magistrates' court on September 9, to fourteen charges of offences under the Dangerous Drugs Act. On the thirteen charges he was fined a total of £325, and ordered to pay £26 5s. costs. The magistrates adjourned the hearing of the fourteenth charge for two weeks, the chairman saying they wished to take a certain course of action but could not do so without further medical advice. The charges alleged that, between March and June, Dr. Lucas made out prescriptions which contained pethidine for a number of patients, and diverted the drug to his own use. No evidence was offered by the prosecution on a further four charges. The prosecution said Dr. Lucas had practised in the Shirley area for about twenty-three years. In a statement to the police the doctor said that he was unable to get an assistant in his practice. He had tried to retire but the Ministry of Health would not permit it until he was sixty. He complained of the Ministry's "intransigent attitude in refusing me my own money in compensation in order to take a partner." As a medical practitioner he considered that in ten to fifteen years pethidine would no longer be considered a Dangerous longer be considered a Dangerous Drug. For the defence it was said that the doctor had a history of painful complaints and abdominal operations going back over many years. In 1954 he had been advised by a medical practitioner to use pethidine for the relief of this abdominal pain and in 1957 he became an addict. Under the National Health Service Dr. Lucas attended to between 2,000 and 3,000 patients and, the defence stated, not one of those patients had suffered as a result of his addiction; despite his illness he gave his patients full attention.

NEW PRODUCTS

Now in 4-oz. Size.—A 4-oz. pack of Mil-par in plain form only has been made available by Chas, H. Phillips Chemical Co., Ltd., 179 Acton Vale, London, W.3.

Light-resistant Surgical Stocking.—A new Lastonct stocking offered by Lastonet Products, Ltd., Carn Brea, Redruth, Cornwall, is made of elastic net containing light-resistant rubber. It is claimed to prevent deterioration caused to rubber by exposure to light, and so to enhance the efficiency and lengthen the life of the stockings.

Cosmetic Cream with Silicones. — Claimed to be the first cosmetic cream to contain silicones, Creme Sevilan is being marketed by Fassett & Johnson, Ltd., 86 Clerkenwell Road. London, E.C.1. as "a complete day and night cream for complexion care all round the clock." Creme Sevilan is packed in tube.

A New Antacid. — Bayer Products, Ltd., Eden Street, Kingston-on-Thames, Surrey, are placing on the market on September 30 a new antacid, Actal (sodium polyhydroxyaluminium mono-



carbonate hexitol complex), supplied as tablets of 360 mgm. in container of forty-eight, 250 and 1,000. The smallest packing (here illustrated with the 250 pack) contains six strips of eight tablets each

Vitamin - containing Beverage. — Claimed to contain 100 per cent. fruit juice and containing "more natural goodness than any other fruit drink on the market." Guavin is the juice of guavas and black grapes together with grape glucosc. It is packed in a bottle of 12½ fluid oz. The makers are Pascall-Knight. Ltd.. Oval Road, Croydon. Surrey.

A "Super" Torch.—A new Drydex "super" torch, type 2ET20, made from polished aluminium with a red poly-

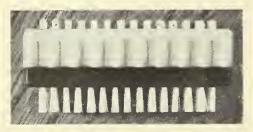


thene head, has been introduced by Chloride Batteries, Ltd., Clifton Junction. Manchester. The torch has bottom-entry loading and a pre-focus bulb.

"Milk Shake in a Straw."—Mellin's Food, Ltd., 102 Naylor Road, London, S.E.15, are marketing a completely new range of food products, "milk shake in a straw." The straw is in three flavours (strawberry, raspberry and chocolate), and in use the flavoured

end of the straw is placed in the milk and first gently sucked, then blown to dissolve the mixture and raise bubbles. The straws, each flavour in packet of ten, are available for sale through chemists.

"King-size" Nailbrush.—A largerthan average—"king-size"—nailbrush with reinforced centre filaments has



been introduced by the Halex division of the British Xylonite Co., Ltd., London, E.4. The brush, here illustrated, is made of polystyrene with a tough nylon filling on both sides.

"Fantasy" Cosmetic Colours.—To match fashion colours introduced by a number of fabric and jewel tashion houses in London, Gala of London, Ltd., Hook Rise, Kingston By-Pass, Surbiton, Surrey, are marketing a range of nail fantasy colours and a corresponding range of pearl eye shadow. The colours are "Blue Moon," "Green Willow," "Sea Spray" and "Lilac Mist." For the additional nail fantasy colours of "Gold Satin" and "Pink Topaz" they are marketing gold eye shadow, and for the new "Silver Satin" and "Iced Primrose" nail fantasy colours they offer silver pearl eye shadow. The colours are irridescent and look lighter on the nail than in the bottle. They are issued in a bottle of distinctive new shape and are at a uniform price.

Lightweight Oxygen Set. — British Oxygen Gases, Ltd., Spencer House, St. James's Place, London, S.W.l, are issuing a lightweight oxygen set designed primarily for use in the home. The set incorporates a new style two-flow pressure regulator which enables oxygen to flow at either two or four litres per minute and which operates accurately over long periods without attention. The contents of the oxygen cylinder are easily read by means of a small gauge fitted to the regulator, and the outlet mount on the regulator has a bayonet-type fitting to receive a special connector and non-kinkable Polymask plastic tubing. Oxygen is breathed through a Polymask inhaler which is light in weight and made from transparent plastic material. The claim is that the mask

can be used with safety and economy, and that there is no need for it to be sterilised since it can be discarded after use by each person. A combined cylinder key and spanner is provided so that the cylinder valve can be opened and the regulator secured firmly to the valve. The open end of the spanner is also suitable to tighten the gland nut on the cylinder valve. Full instructions for assembling and operating the equipment are included in the container. The set is available from the Medical Division of the company at Brentford, Middlesex.

TRADE NOTES

"Red with a Blush of Pink."—" Bed of Roses," a new lipstick shade so described by Helena Rubinstein, Ltd., 3 Grafton Street, London, W.1, is introduced to suit the autumn fashions and is claimed flattering to all hair colourings.

Product Name Changed. — Paines & Byrne, Ltd. Perivale, Greenford, Middlesex, announce that future supplies of their preparation, placental ointment. will be distributed under the brand name Variderm, Packings and prices are unchanged and information cards on Variderm are available to pharmacists on request.

Strength Increased. — Smith & Nephew Pharmaceuticals, Ltd.. Bessemer Road, Welwyn Garden City, announce the availability of an increased strength powder of their calcium B-PAS/isoniazid combination, Therazid. To be known as Therazid forte, the new powder is supplied in container of 100 and 500 heat-sealed packets—each packet containing 3'5 gm. calcium B-PAS (Therapas) and 87'5 mgm. isoniazid B.P. (Pycazide). This combination is becoming increasingly popular amongst chest consultants, and where unspecified prescriptions for calcium B-PAS + INAH are presented, Therazid, in the appropriate strength, can be supplied.

Replaced or Discontinued.—The 0.5 mil ampoules of diphtheria-tetanus prophylactic (D.T.P.) have been discontinued and replaced by ampoules of 1 mil by Parke, Davis & Co., Ltd., Hounslow, Middlesex. The list price is unchanged but the vaccine is now labelled (D.T.) instead of (D.T.P.). The company advise that the following have been discontinued and stocks are exhausted:—Epanutin suspension. 80-oz.; folic acid tablets, 5 mgm. (C.T. No. 826). 25, hyoscine com. (Hy. T. 104). 100; morphine sulphate gr. $\frac{1}{8}$ (Hy. T. 14). 100; Veratrone, 1 oz.;

CHARMACEUTICAL DUPPLIES (Coventry) Le

Pharmaceutical Supplies (Coventry), Ltd., assisted the Standard Motor Co., Ltd., Coventry, during the development and lesting of the new Atlas van. A film—" No Ordinary Day "—from which the accompanying illustration is taken, was made by the Standard Co. to introduce the new van.



The new Commer express delivery van designed for the small operator and tradesman powered by a 1,494 c.c. overhead valve oversquare engine of new design. It is produced by the Rootes Group.

acne bacillus vaccine, 50 million per mil, 10 mils; bronchial asthma vaccine (mixed), 5 mils; gonorrhoea vaccine (mixed), 10 mils and 25 mils; staphylococcus vaccine (mixed), 1,000 million per mil, 25 mils; streptococcus vaccine (mixed) (for respiratory infections).

All-purpose Soil Steriliser.—Vapam, a new soil steriliser launched by the Murphy Chemical Co., Ltd., Wheathampstead, Herts, for use in agriculture, gives simultaneous control of soil fungi, eelworms and weeds. Its use overcomes the need for the double chemical treatment hitherto necessary with eelworm-infested soil. Vapam is easy to apply, and extensive trials have been carried out in which it has proved extremely effective against the spores and mycelium of the principal soilborne diseases and has given a good control of both potato-root eelworm and root-knot eelworm. As a soil steriliser Vapam has given a commercial control of weeds, including oxalis, for up to three months. Vapam is issued in 4-gall. and 24-gall. containers.

Bonus Offers

BAYER PRODUCTS, LTD., Neville House, Eden Street, Kingston-on-Thames, Surrey. Panadol tablets. 24 boxes in display outer charged as 20. For four weeks from September 22.

DAE HEALTH LABORATORIES, LTD., 17 Berners Street, London, W.1. Val-Pak. Fifteen tubes or fourteen sachets invoiced as 1 doz. On minimum 3-doz. order. Until September 22.

GOYA, LTD., Badminton Court. Amersham, Bucks. Beauty Plus all-inone beauty cream in plus-size tube. Fourteen invoiced 1 doz. Until October 31.

MEGGESON & Co., LTD., 11 Garrison Lane, Chessington, Surrey. Meggeson glycerin and blackcurrant pastilles, glycerin, lemon and honey pastilles, and Gee's linctus pastilles. 2 doz. tins free with each order of the value of £10. Up to Scptember 30.

MERCK SHARP & DOHME, LTD., Hoddesdon, Herts. Tyrozets and Sucrets throat lozenges. Double normal bonus. For limited period.

THEAKROCK PHARMACEUTICALS, LTD., 14 York Buildings. Hastings, Sussex. Seaglow halibut-liver oil capsules. Two. three and six tins of 100 or six tins of 50 free according to parcel chosen. For unstipulated period.

BOWATER - SCOTT, LTD., Bowater House, Knightsbridge, London, S.W.1. Scot-Tissuc. Introductory composite case bonus offer ends September 26, five weeks earlier than originally anticipated.

AIDS TO PRODUCTIVITY

Portable Recorder.—The Dictaphone Co., Ltd., Acton, have made an addition to their Dictaphone range of dictating machines: the Dictet. Weighing less than 3 lb., the Dictet looks like a camera and carries 60-minute recordings on \(\frac{1}{4}\)-in. magnetic tape. It may be played back immediately or posted for hearing or transcription elsewhere.

Cash Till with Adding Machine.—
Ideal for the smaller shop and business, and for the multiple organisations where individual counters do not warrant an expensive cash register, the Contex cash till comprises a heavy metal cash drawer, and, fixed solidly with the drive mechanism, a Contex adding machine. Unlike most cash registers incorporating an adding

it automatically types out the information at the rate of 120 words a minute.

Automatic Keyboard Instructor.—The Solartron Electronic Group, Ltd., Thames Ditton, Surrey, manufacture an automatic keyboard instructor, the Saki, designed for training operators of cardpunch systems such as the Hollerith. The "instructor" leads the operator step by step to a polished performance. It is claimed to train a pupil to become a full-speed touch operator in eighteen hours, against fifty by conventional methods. Messrs. Solartron recently widened their activities by taking over the distribution of the electronic and nucleonic instruments and associated equipment manufactured by Ericsson Telephones, Ltd.





Contex till and adding machine (left) and Contex calculating machine (Office Machinery, Ltd.).

machine, the contex cash till gives a full capacity adding machine, available for use in checking invoices. It fastens firmly to any reasonably smooth surface, by virtue of the sucker feet incorporated in the manufacture. Also available from the distributors (Office Machinery, Ltd., 169 Tottenham Court Road, London, W.1) is the Contex decimal model 10, a hand operated calculating machine, incorporating all the features one would expect from an expensive electric calculator.

Office Chair in Fibreglass.—A new office chair in black fibreglass made by Bribond, Ltd., Burgess Hill, Sussex, is in a shape not easily interpreted in any other material. Contemporary enough, it is claimed, to fit in with modern furniture, but not out of place with older equipment or fittings, the chair has high resistance to scratching, is light in weight and easily cleaned, stands up to acids, and is easily decontaminated should it come into contact with chemicals.

Punched Paper Tape Typewriter. — Remington Rand, Ltd., I New Oxford Street, London, W.C.I, announce that a new model electronic punch paper tape typewriter is being produced in the United States. When used as an ordinary electric typewriter in preparing source documents, the new machine automatically translates all or selected data that the typist writes, into a punched paper tape for subsequent automatic processing, or when punched paper tape prepared by it, or other machines, is fed into the reading unit

An Adaptable Computer. — An "electronic brain," produced by E.M.I. Electronics, Ltd., Hayes, Middlesex, is a compact analogue computer that enables problems of design and production to be investigated at a great saving in time, cost, labour and materials. The makers claim that it may be operated by users with no specialised electronic knowledge. Recently the computer was used in a new chemical plant to simulate the problems of operating the plant while it was still in an early stage of development, providing information concerning start-up and shut-down procedures, etc.

Recorded Telephone Messages. — By means of the Ipsophone, the manufacturers of which are Southern Instruments (Communications), Ltd., 49 St. James's Street, Piccadilly, London, S.W.I, telephone messages or inquiries may be automatically recorded in the absence of a subscriber. An announcement gives the name of the Ipsophone subscriber and invites the caller to speak, the caller hearing in that way the words that would ordinarily be used by a telephone operator or the subscriber himself. The message transmitted is recorded and stored within the machine until such time as the subscriber wishes to hear it, and the Ipsophone subscriber can listen to the recorded message at any time, either by operating the control apparatus of his Ipsophone or by calling it from any telephone in the world. No unauthorised person may, however, listen to the recordings, which may be securely

locked in the machine by means of two keys provided. The Ipsophone is claimed "the only automatic machine that answers the telephone itself, invites the caller to speak, and can be made to play back by the owner."

Cash Registers.—Clary Cash Registers (concessionaires of Clary International, Ltd.), 8 Great Winchester Street, London, E.C.2, direct attention to two models of their cash registers: the No. 32156, a hand-operated machine, and the Clary 301, a low-priced electric register. The hand machine, in addition to adding, listing and subtracting credits or refunds, automatically certify a docket of any size when inserted in the chute, enabling a comprehensive credit system to be maintained and doing a great deal to prevent errors in recording credit sales, besides saving much hand-written work. The electric register incorporates the same features, but additionally prints all credits or refunds in red ink on the tally roll and automatically subtracts them to preserve perfect balance. The electric machine was awarded a gold medal for design and quality by American Manufacturing, a publication covering the electrical engineering field, and is understood to be the only cash register ever to have been hon-oured in that way. Messrs. Clary are also marketing in this country an American adding machine claimed to give a much speedier output than other standard electric adding machines.

Multiplied Copies.—Many of the advantages of continuous stationery are made available to the small office by a system known as the Cat-link glove, introduced by A. J. Catlin, Ltd., Jasper Road, London, S.E.19, a leading supplier of continuous stationery. The plier of continuous stationery. The device consists of a transparent plastic backing sheet or "glove" into which the required number of carbons, affixed to a strip of cardboard, are inserted. The stationery is threaded between the carbons and through the glove, all of which are then inserted into a normal typewriter like an ordinary letter. The end of the glove is fitted with a bar that runs up against the platen roller that runs up against the platen roller when the typist has come to the foot of the first form, the length of the glove being matched to the length of the form used. The typist then releases the paper feed, pulls the form through the glove until the perforated edge at the bottom is clear, and tears it off; leaving the next form in the correct position within the glove. The paper feed is then re-engaged and the roller turned backwards to bring the top of the next form down ready for typing. Carbon inserts are made available in sets of two, three, four or five carbons, to provide from two to five copies. Each insert may be used from fifty to 100 times, depending on the number of copies per sel.

Staircase Time Switch. — Equipment & Services, Ltd., The Fairway, Bush Fair, Harlow New Town, Essex, are marketing a new staircase timer type SCS, manufactured by the Electrical Remote Control Co., Ltd., which automatically switches on for any required period up to fifty 100-watt lamps.

PHARMACEUTICAL SOCIETY OF IRELAND

September meeting of Council

EPRESENTATIVES of the Pharmaceutical Society of Ireland were to be invited to a meeting with the Department of Health early in October to discuss the draft of the Pharmacy Bill, said THE PRESIDENT (MR. M. Power) at the September meeting of Council held in Dublin on September 9. He reported that considerable progress had been made by the Department in the drafting of the non-contentious heads of the proposed Bill. MR. H. P. CORRIGAN (vice-president) said it was gratifying that the result of so many years' hard work was in sight. He proposed that the Pharmacy Bill Committee should hold a special meeting in September to consider suggestions which had been made by members and by local associations so that those suggestions could be brought forward during the impending discussions. It was decided to hold a meeting during the last week of September.

THE PRESIDENT welcomed Mr. D. Moore, a member of the Council of the Pharmaceutical Society of Northern Ireland, who attended as a visitor to the Council meeting. Also present were Messrs, K. A. Banks, D. J. Kennelly, T. R. Miller, J. Gleeson, J. P. Kissane, T. B. O'Sullivan, M. F. Broderick, V. McElwee, P. Fullam and Miss Laura Cunniffe. The Registrar (Mr. J. G. Coleman) was in attendance. Apologies for inability to attend were received from Messrs. P. A. Brady, C. J. Cremen, A. A. Toher and J. J. O'Regan, Mr. M. Costello (treasurer) was excused in order to attend the International Pharmaceutical Federation Congress at Brussels. THE PRESIDENT condoled with the registrar on the recent death of his mother and asked that the deep sympathy of the Council be conveyed to his relatives. Visitors to the September examinations were appointed. Messrs. J. P. Kissane and D. J. Kennelly were appointed scrutineers for the October Council elections.

Pharmacists in the Forces

In reply to a memorandum from the Society on the pay and conditions of service for pharmaceutical chemists serving as professional officers, the secretary to the Minister for Defence wrote "... on the evidence before him the Minister is unable to agree to any alteration at present in the pay and conditions of such officers." MR. MCELWEE hoped that the matter would not be allowed to rest. The President replied that a summary of the pay and conditions of service relating to doctors, engineers, pharmacists, veterinarians and other officers had been included in the memorandum and that the Minister had been requested to review the conditions affecting promotion of pharmacists so that they would attain parity with other professional officers. Further representations would be made and, possibly, a deputation sent to the Minister.

A report of a meeting of Seanad Nominating Bodies was submitted by the secretary, and a letter from the Seanad Electoral Law Commission acknowledged the receipt of a letter containing the Society's views on the existing system of election to the Senate. Dr. V. Coffey, 74 Cowper Road, Dublin; Sr. Mary Eugene Connell, Mount Oliver, Dundalk; Dr. Nicholas O. Azinge, Asaba, Nigeria; and Dr. John P. Daly, 46 Ramleh Park, Dublin, submitted certificates from the Apothecaries' Hall of Dublin and were granted registration as pharmaceutical chemists. The reports of the Law, House, Schools and Examinations Committees were submitted and approved.

Arising from the Schools Committee report, MR. KEN-NELLY said that the Council should do something to bring to the attention of mistresses of schools and principals of colleges that the new pharmaceutical assistants' course did not demand science subjects for preliminary registration. Most schools and a considerable number of the Society's members still thought that physics and chemistry were obligatory—possibly confusing the registration requirements

with those for students proceeding to the qualification of Pharmaceutical Chemist. Every effort should be made by local associations and by pharmacists throughout the country to clarify the position for potential students in their own areas. No one could deny that there was an acute shortage of staff; only by recruitment of suitable young people could that shortage be eliminated. Mr. O'NEILL said he understood that colleges had been circularised last year but the registrar had informed him that the new regulations had come into effect too late to be of much use to students completing studies. If schools were circularised at this time of the year it would enable teachers to provide courses for students interested in pharmacy as a career. MR. GLEE-SON, agreeing with the previous speakers, said that parents had told him they would have put their children to pharmacy had they been aware of the assistants' course. It was an attractive calling for a girl and an advertisement in the morning newspapers might be an effective way to bring the new regulations to the notice of parents and teachers. MISS CUNNIFFE said the shortage of assistants was because shorter hours were worked in other spheres and better pay was offered in the early years. She and Mr. MILLER quoted scales of pay offered elsewhere to girls of school-leaving age. It was decided that publicity should be given to the new assistants' course by circularising members and schools and by advertisement in the public Press.

German Research Award

THE PRESIDENT informed the Council that Dr. Timoney had applied for leave of absence to take a three-month post-graduate research scholarship at the Max Planck Institute in Munich, awarded to him by the Deutscher Akademischer Austauschdienst (a German government-sponsored cultural body). The Council expressed pleasure at the honour bestowed on Dr. Timoney and the College of Pharmacy and agreed that the honorary officers would meet him.

The Registrar reported on the death of Kevin Doherty, M.P.S.I., William Urton Smith, M.P.S.I., Michael Joseph Cogan, M.P.S.I., Patrick Kennedy Ryan, L.P.S.I., Jeremiah John Costello. Dispensing Chemist and Druggist, and Sydney Bolton, R.D.

At question time Mr. McElwee asked if propositions put forward at the last annual meeting had all been considered and, where practicable, implemented by the Council. THE REGISTRAR enumerated the matters which had come up for discussion and stated that it was normal procedure to bring them to the attention of the Council. MR. O'NEILL said he was glad that attention had been directed by Mr. McElwee to that phase of the Council's work. He would not like to think that any member who had gone to the trouble of attending an annual meeting and expressing his views would be disregarded by the Council. Until Mr. McElwee spoke it had not occurred to him that such a doubt might be entertained by ordinary members. Mr. Cor-RIGAN pointed out that with the exception of the proposal to appoint a public relations and press officer (which the Society could not afford at present) every proposal put forward had been considered and implemented during the

At a meeting of the Benevolent Fund Committee grants amounting to £52 were passed for payment.

Licence Certificates were signed and sealed for: Eileen Florence Eakin, Brendan Columbanus Kieran, Lucy Agatha Kelly (née Byrne), Patrick Joseph O'Hagan, Mary Buckley. William Meredith W. Black, Eibhlin O'Beirn, Cecilia Healy. Elizabeth Mary Fitzgerald, John Eric Burrell, Nuala Elizabeth O'Brien, Nora Catherine Roche, Margaret Elizabeth Carolan, Thomas Patrick Whelehan, and Mary Margaret O'Neill.

(To be concluded)



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Twelve Months of Research

It is convenient to regard the papers presented at the science sessions of the British Pharmaceutical Conference meeting as being an index of research work done in the pharmaceutical field since the previous meeting. That is, of course, not strictly the situation. Some of the papers that are being read represent work begun much more than twelve months ago, while some work completed during the year will not be reported upon at this year's Conference meeting. Nevertheless, over a period of years the papers presented and discussed are a reflection of the amount of research work done during twelve months. Regarded in that way the contributions may be compared as one year's corn harvest is compared with another: in both quantity and quality. This year's harvest of research would seemwriting before any of the discussion has taken place to make 1958, if not a vintage year, at least well up to standard in quantity and even a little above average in quality.

Among the problems studied are some highly practical ones like the efficiency of steam sterilisers (an improvement in the design of steam traps is likely to be one outcome); what governs the "angle of repose' in heaped powders and how humid conditions affect the handling of powders; what effect prolonged storage has on the readiness of tablets to disintegrate; and what degree of accuracy is to be expected from pharmaceutical students using the ordinary apparatus of the college laboratory. New substances of possible therapeutic value are introduced to the profession, such as compounds having neuromuscular blocking, antibacterial or antifungal activity. Progress is chalked up in elucidating the complexity of the senna and cascara glycosides and their breakdown products, and a useful study is made of the factors that influence the action of drugs through the skin. The specialist fields within which contributions are made range across pharmaceutics, pharmacology, organic, analytical and physical chemistry, biochemistry, pharmacognosy and botany.

The value and importance of the science sessions therefore, not solely from an academic point of view but in the influence they must have on industry and the everyday practice of pharmacy, needs no emphasis.

Yet some illuminating inferences may be drawn from a glance at the sources from which the papers come. This year the contributions made by the academic institutions form an exceptionally high proportion of the total (about two-thirds). Some of them, as may be

expected, are on advanced or abstruse themes, but it is pleasing to see attention given to basic problems which, if they had been studied years ago, might have given a more scientific outline to and a more economic output from some of the machinery used in manufacture. A case in point is the physical properties of powders, a subject which hitherto seems to have been left to rule of thumb.

That the hospital pharmacists have made no greater contribution is regrettable, but in the present conditions of staff shortages is understandable. The wonder is that even one hospital chief pharmacist has found the opportunity to carry out a study of such value and importance as that of Mr. Hadgraft and his collaborators on the biochemistry of 5-hydroxytryptophan. Perhaps that team benefited by the close association that happily exists between his hospital and the school of pharmacy, University of London, a type of association that other hospitals might find it valuable to try and promote.

Contributions from the manufacturing houses are, by comparison, fewer than usual, and of them the high proportion coming from two manufacturers only shows up the more sharply that many others have contributed nothing at all. Making every allowance for varying rhythms and paces of work in the different laboratories, so that a manufacturer who has nothing to report this year may have more than one paper to present at the next Conference meeting, it is difficult to believe that much good work that is being done is not seeing the light of day. (One does not like to draw the other conclusion that research departments, which usually figure in company reports, are mentioned there rather to bedazzle the shareholders than for any real contribution they may have made.) Perhaps modesty or diffidence may be holding back some of the smaller companies' laboratories from contributing. If so they should be encouraged to overcome their shyness. The problems to be investigated are so numerous and varied that not all can be left to the larger laboratories. Indeed a practical problem of, say, how to translate a new pharmacopæial specification into manufacturing-quantity terms may present itself with greater urgency to the smaller manufacturer, and therefore be more likely to find an early solution.

It is a little disappointing, too, that those many American manufacturers who in recent years have set up establishments in this country are not more in evidence at the Conference meetings. Certainly it is the British Pharmaceutical Conference, but the U.S. houses have, one supposes, settled down permanently on British soil. They are making their contribution to the trade associations, are manufacturing with materials purchased in Britain to British specifications, are employing British scientists and staffs, and must be encountering production and development problems to which the answers are not entirely forthcoming from the experience of their American principals, even if the more fundamental research into new therapeutic agents continues to be done in the United States (and that itself is a situation we may hope is not to continue in perpetuity).

In a year when the standard and volume of contributions are so high we may be permitted these criticisms, whose sole purpose is to enable the Conference to rise to new levels of usefulness to the craft and the community.

"Paper Age" but Where were the Papers?

It is too early to hazard a considered estimate of the ultimate effects of the international pharmaceutical congress held in Brussels last week (see p. 290), but from the scientific viewpoint there is no doubt about the excellence of the many papers submitted. The numerous aspects of pharmacy were evident in the wide range of subjects which were discussed, including recent advances in the field of adrenocortical hormones; radioisotopes and their applications; chromatography; pharmacognosy; practical chemistry; tableting; toxicology and analgesics. A tremendous amount of information was to be gathered at those sessions. On the social side our congratulations are offered in full to our Belgian friends who acted as hosts. To make arrangements for over 1,000 visitors from thirty-nine nations is no mean task. When that task was complicated, as this one was, by the holding of the Universal Exhibition, it was an almost impossible one. However, the officers laboured enthusiastically and successfully, and delegates attending the Congress owe the organisers sincere congratulations and thanks.

We agree with the President of the Belgian Pharmaceutical Association who stated that international gatherings like the Congress are "no longer merely useful: they have become an absolute necessity. For it is only by pooling our experience and the results it has led to that we can hope to attain the solutions we look for." Those who attended the Congress found that pharmacists in other countries were experiencing similar if not identical problems and the Congress provided a valuable opportunity to discuss them.

Some features of the Congress, however, were less satisfactory than they might have been, and we would suggest that, before the next Congress in Copenhagen in 1960, some serious consideration should be given to the internal arrangements.

Sir Hugh Linstead who, as the president of the Federation, did an arduous job and was applauded by pharmacists of all nationalities, said during his opening speech that this was the paper age. But on some occasions there were no proofs of the papers at the Congress. We sympathised with our Belgian and Dutch friends, who found themselves in a difficulty on the final day, when the Congress was asked to vote upon a recommendation submitted by the scientific section. It concerned pharmaceutical education, and was based upon a technical paper that was a detailed statistical analysis of the requirements in various countries. No copies of the paper had been distributed before the meeting, and no papers were available of the resolution. The simultaneous verbal translations that took place in the amphitheatre were not sufficient to enable those present to form a sound judgment, and understandably the Belgian and Dutch representatives opposed the proposals, and the recommendation was rejected by the Congress. On other occasions, papers were presented to sections without copies being available. When that happened, discussions were necessarily less rewarding than where preparations had been more adequate. The Federation must ensure that all its members are adequately, and sufficiently early, supplied with information to enable them to make really positive contributions to its sessions. Only if the members are well informed can they hope to help to promote the high ideals for which the Federation stands.

Higher Local Rates Ahead?

It takes a rash man to forecast with any degree of authority the future of the rates muddle. Much depends on the political climate when authorities start their work on producing the new valuation list for 1961. What will actually happen then is anybody's guess. Certain it is that many local authorities are determined that traders, who managed to "steal" a 20 per cent. cut from under their very noses after the 1957 revaluation, shall not get away with it again.

The rating position at present is that domestic properties — houses, flats and the like — are rated at something near pre-war rental values, industry and freight transport pay at the rate of 25 per cent. of their net annual value (50 per cent. from April 1, 1959), and shops, offices and similar premises are allowed rating relief of one-fifth, or one-seventh if there is an element of residential occupation. So that, for all practical purposes, every one gets some form of rating relief. It is now proposed that all premises should be revalued on the basis of current rental values—that is, on the basis of how much rent could reasonably be asked for that particular property—and that the new valuation list should come into operation from April 1, 1961.

As rents have tended to rise since the last revaluation it means that shopkeepers may expect their rateable values to go up also. If they lose their 20 per cent. rating relief, and there is no legal provision at present for it to continue beyond April 1961 — their rate demands will also spiral. However, it is the householder who will face the most serious increase, there being no comparison with pre-1939 rental values and present-day values. It is not expected that any change will be made for industry since it will have to meet almost twice as heavy a rating demand in 1959 when its share of rates goes up from 25 per cent. to 50 per cent. and it would have to be an extremely brave Chancellor of the Exchequer to seek another change so soon. So that the questions now to be asked are-will the Government leave the householders, many of them committed to large and costly mortgages, to face greatly increased rates demands? Or will they bring in some measure of relief to help soften the blow? Recent statistics show domestic property bears over 52 per cent. of the rates burden, shops, 12 per cent. and office and miscellaneous property 24 per cent.

Some London borough councils have made it plain to Mr. Henry Brooke (Minister of Housing and Local Government), that as occupiers of domestic properties will be called upon to pay a "considerably increased share of rates" some "remedial action" is required to remove any undue hardship. In other words, what the councils want is that domestic ratepayers should be given the same kind of rating cut as was handed out to shopkeepers in 1957. But they are not suggesting that the shopkeepers should get a cut too. They have, in fact, lobbied the Minister for a definite assurance that the cut now enjoyed by traders will actually expire in 1961 and not be continued.

However, much can take place, including local government reorganisation and a drastic change in the municipal finance system, before 1961. But the fact that councils are expressing opinions so early is important and it might be opportune for the same force of opinion that extracted the 20 per cent. rating cut last year to be harnessed once again.

AN EGHAM PHARMACY TRANSFORMED

Doubled and reconstructed without interruption of business

N this store the design of every item has been given detailed consideration in an attempt to unify the total effect and avoid the haphazard, muddled and inconsequential style of presentation and display often still seen in many suburban and provincial shops."

Those words form the concluding paragraph of a brief description by the architect, Mr. E. P. Wilson, A.R.I.B.A. (Paul Mauger, Gavin, Mathers & Mitchell, Welwyn, Herts), of the reconstruction he planned and supervised for the headquarters pharmacy at 41 High Street, Egham, of the twenty-two-branch business of H. W. Herbert, Ltd., The

high degree of unification he achieved may be judged even from a quick glance at the illustrations, but reveals itself much more from a study of the problem and how it was tackled.

The description "haphazard, muddled and inconsequential" could well have been applied to the pharmacy as it existed before the reconstruction, as the pictures again show. But in extenuation it should be mentioned that much of the muddle was unavoidable, since the business had grown beyond the practical limits of the premises. Eventual expansion had been foreseen by the purchase of an adjoining shop which, until required to be incorporated into the pharmacy, was run as a retail stationery business.

The decision to bring the two shops into one wholly new pharmacy was taken on December 6, 1956. No time was lost in getting into action, and the first completed drawings from the architect came through on January 10, 1957. They were critically discussed (indeed they underwent considerable modification before being finalised) and the order to the shopfitters, Rudduck & Co. (Shopfitters), Ltd., London, E.C.1, was placed on February 1, 1957.

There followed a series of weekly meetings between

architect, shopfitters and the company. Many difficulties special to the premises had to be overcome, and business had to be carried on in the meantime. The quantity surveyors for E. C. Peck & Partners, London, W.1, and the constructional work was done by J. & C. Bowyer, Ltd., London, S.E.19. One problem was that the ceiling levels were low for the size of the shop. An illusion of height was created by having two levels and two colours of ceiling, and by special lighting effects. By the gutting of the whole of the ground floor (though without undue interference of the normal services and trading activities of the

pharmacy) a new shop and dispensary of over 1,500 ft. super and a new suite of offices above for the company have been provided. The two steel columns which were necessary to support the upper structure were so treated as to make a design feature of one, which appears to provide support for the roof of the island kiosk, the second being decorated to blend with the design.

Layout and fixtures were all specially designed by the architect in collaboration with the director. The aim was to provide for the particular needs of the dispensing, drug, surgical, toilet, cosmetics and perfumery, shaver - service, electrical and photographic (including a projection room their own transparencies, etc.)

where customers can view their own transparencies, etc.), and babies' departments.

The fixtures in the dispensary and surgical and babies' sections are enamelled white. In the remainder of the shop the fixtures, counters and woodwork are finished in a combination of dark veneered elm and light oak to provide contrasting shades. The counters have a dark elm edging to the light (oak) faces, but for variety's sake light and dark are reversed on the wall fixtures. The colour scheme of decorations is primarily in a combination of pastel blues



The new frontage of the premises. The windows are set back from the facia-less wall above, behind which are the offices of the company.





The premises as they were. The pharmacy occupied rather less than half the width. The company owned the left-hand shop and were temporarily running it as a stationery business. The right-hand picture gives an impression of the congested conditions within the pharmacy.



The main drug and toilet counter. Each of the units is muvable. At the far end there is a clear view into the dispensary beyond. Note the unusual glass-fronted tier in the wall fixtures below the customary "open" run. The neatness of the knobless drawers is apparent.

and greys, with judicious use of black and white for good contrast and "sparkle." The floor is in a combination of grey, black-and-white marbled rubber tiles in a specially designed pattern.

The interior layout of the shop is most flexible in the sense that, while all the counters, showstands, etc., have been carefully placed in an obviously considered arrangement, each is movable. The sloping fronts of the counters add to the comfort of the customer, and any sacrifice of display value from the absence of counter-front display cases is more than compensated for by the display value of the rear fixtures. Behind the cosmetic counter, for example, there are the customary glass fixtures down to counter level, but below them the unusual strata of one open "run," one glass-fronted run well adapted to attract the customer's eye to exclusive agency lines, a single row of drawers, and finally the conventional sliding-fronted lockers. All the drawers are noteworthy because they have no knobs. Protrusions mean risk of torn clothing and have

been eliminated both in the assistants' and in the public parts of the shop. Instead of knobs the drawers have recessed openings for the fingers and the effect is one of a most pleasing orderliness, quite apart from considerations of safety.

The lighting was designed by the architect, and heating is by Supa-stor electrical storage heaters recessed into the fixtures. The storage heaters are recharged during the off-peak period at a reduced tariff.

The shop-front is in bronze, with projecting window beds above bluegrey ceramic-mosaic risers, and the forecourt is paved in mottled grey terrazzo tiles. The shop has no facía as such, the front of the building having been designed to take the lettering direct on the grey stone-faced rendered wall surface. The letters themselves are of enamelled metal in two colours. All the door-handles are Swedish in design and make, and the windows have Venetian blinds that may be used to protect the merchandise from the earlymorning sun. The glazed doors have solid wood frames and metal kickplates. Usually they are open during

shop hours but as they swing either way they are never a problem to the customers. Some might regard the set-back frontage of the shop as a loss of sales space within, but experience has already shown that it is put to good use by mothers with baby carriages, who might otherwise be shy of choosing between manœuvring the pram through the doorway or leaving it unattended on the public footpath. A glass panel on either side of the door contributes to the suggestion of open invitation to enter the shop, but the floor displays behind the panels have a security as well as a sales purpose. Sales promotion never has been far from the minds of the designers. It is evident in such details as the special letter-box for films and prescriptions beside the door.

Behind each window, what is often "dead" space in a shop is here taken up with a corridor and false wall for sales-cases (such as the baby corner of one of the illustrations), while space under the window-bases is used to house clips and other window-dressing material. All the window backs are locked except during dressing.



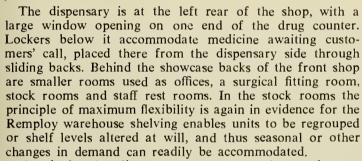
Beside the surgical counter, the placing and final design of which is still the subject of experiment, is a self-service baby corner, with strained food varieties, for example, clearly labelled for casy and quick selection by the customer.



With its tile-backed, laminated-plastic-surfaced bench, stainless sink unit, water heater and overhead cork store, the dispensary is well arranged.



The right-hand side of the shop is given over to fixtures for display and storage of toilet goods (with a special section for men's toiletries) and photographic department with two small counter showcases. The door just seen at right leads to a projection room.



No doubt the directors and manager have taken so exhaustive an interest in every detail of design partly because the shop is the business from which all the other



Soaps, tooth-pastes and other quick-selling toilet articles are set out on a tray-topped island counter, which, with its own specially illuminated roof, forms a kiosk that attracts the eye and at the same time tempts the purse.

branches sprang, and the central warehouse stands on the same site. Actually the business was established a few doors away, but the present chairman of the company, son of the founder, was born on the premises though he went into another profession than his father's and rose in it to become the president of the Law Society. It is, however, certain that the good ideas that prove best among those improvements that may be regarded as experimental will be adapted to the advantage of other branches of the business. For the reconstruction has been the pride of two pharmacist directors (and old college chums) Messrs. J. Kershaw and H. Tetlaw, who are also alert to watch customer trends and reactions and experiment in better ways of catering for them.

Onward from Galen

A CURRENT CAUSERIE

ZONULOLYSIS as a technique in the treatment of conditions of the eye has already been referred to in these columns (C. & D., August 9, p. 145). Another innovation at Moorfields Eye Hospital, London, is the introduction, by means of a German (Zeiss) instrument installed there, of "surgery without cutting." The instrument is a "light coagulator." The coagulator produces a sticky patch at the back of the eye wall, to seal off a hole that might, in certain conditions, be produced in the retina. By use of the method it is possible to locate precisely the damage to the retina. The apparatus produces a controlled light of an intensity varying between two and four times that of the sun at the earth's surface.

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THE future of retailing and the form it will take is any-body's guess, and most shopkeepers seem content to meet changes in demand as and when they occur. One class of person compelled to act on some sort of estimate of what the public will want in a few years' time is the town planner. In laying out an estate with houses he must make provision for shops. But how many and for what trades? To attract shopkeepers to a relatively undeveloped area he must offer some inducement, and that has tended to take the form of a restriction on the classes of goods which the new trader and his neighbours may sell. A business consultant who recently addressed a town and country planning summer school at Bangor, North Wales, considers that policy a bad one. He calls for "something more flexible," believing that "the shopkeeper is the best judge of what the

customer wants to buy and when he wants to buy it." But is that really so? In past days complete freedom of competition led to shops being open for over-long hours. Though hours are limited now by legislation and local custom, the question how wide a range of goods to stock in order to satisfy customers, if it is left entirely to shopkeepers, tends to produce an excess of nondescript general traders. An extreme example of the public advantage of limitation is the reservation of most poisons to pharmacists. Chemists do not wax fat on sales of poisons, which are restricted to them for purposes of discriminating against irresponsible purchases. For that same purpose there is much to be said for increasing the scope of the restriction to cover all medicinal products. In return, of course, chemists should be prepared to leave to others the sale of certain other commodities more suited to their trades (though there would have to be discussions about what they were). The business consultant speaking at Bangor had some pertinent observations to make about changes in income-groups and social habits, and the effects those changes might have on the location and trading range of shops. But he mentioned, though he did not say whether or not he favoured the development, that large-scale food outlets might soon be selling haberdashery, hardware and electrical goods. Many of them are already selling toilet preparations and disinfectants, and chemists, though they claim no monopoly in the retail sale of those classes of goods, would not as a rule be found among those who seek a blurring of the outlines between different kinds of shops.

CARS FOR THE COMPANY

An economist examines the case for hiring versus buying

WILFRED ALTMAN

THE rapid expansion in the volume of business conducted by car hire companies in Britain (and even more in the U.S.A.) focuses attention on a subject of natural interest and importance to the businessman. Apart from the pleasure motorist and overseas visitors, who account for the bulk of business conducted by the car-hire companies, is there greater economy in hiring or leasing, rather than buying cars for the use of the directors, executives or salesmen of a company?

All the leading car-hire firms have experienced increasing business and expansion. One has added 100 cars to its fleet, and another claims 300-400 additional cars on the roads during the past five years.

A third, with a fleet of 1,000 cars for hire—and more to be called on if necessary—points out that its contract service especially is proving increasingly popular and is steadily on the up-grade.

Car hiring may be classified into different forms: on a day-to-day basis, with or without chauffeur, or on a yearly contract basis. Charges do not vary greatly between the leading firms in the field, but are obviously lower in the spring and autumn than in the summer.

For example, one company's spring and autumn charges for a Ford Anglia or Austin A35 are 17s. 6d. a day or £5 a week, exclusive of mileage at the rate of threepence per mile, or £2 10s. and £14 respectively for a Ford Zodiac, whereas, in the summer the corresponding charges are £1 2s. 6d. daily, or £7 weekly for the Anglia, and £2 12s. 6d. and £18 respectively for the Zodiac.

The yearly contract rates, taken from another company's tariff, amount to £250 and one-penny per excess mile (over 18,000 miles) for the smaller car (as above) and £460 for the larger (£475 with automatic transmission), plus twopence per excess mile.

Assessing the Advantage

How is the business-man to assess the economic advantages of buying or hiring the car he needs for himself or for senior personnel today? For the purpose of our investigation, the hiring of cars on a short-period or cmergency basis is not being taken into account. The advantages of that form of hire are obvious. A large firm requiring the use of an additional car (and possibly a chauffeur) on that basis is clearly well-advised to make use of that service rather than have an under-employed car (and possibly chauffeur) in reserve for emergencies.

What are the economics of hiring a car on a yearly contract basis? A company supplying its salespeople with a new car costing about £600 (assuming it has been bought at fleet discount rates) can expect to sell it at a loss of £75-100 after a year's use. Indeed, it could probably purchase the car on a contract basis, since the garage from which it was bought would probably contract to repurchase and replace on such a yearly basis. If such a firm leased its cars, the annual rental would be about £250, assuming 18,000 free miles. A figure of £275 may be taken for limitless-miles leasing, but the terms are in any case within these limits, subject to negotiation. 18,000 miles seems to be a reasonable figure for a sales representative to cover in a year.

The running costs, including fuel and oil (but not maintenance and allowance for tyres, which might be negligible in a car's first year) are plainly common to both schemes, whether buying or leasing. In both cases they have to be met by the user, so they need not enter into our calculations. Maintenance costs, small though they are, are another matter. In one case they are met by the leasing company, and in the other by the user, so they should be taken into

account in comparing buying with hiring. Expert figures suggest that about £35 might be used to cover those costs. That cuts down the difference between buying and leasing to £110-40 for a car held by a company for one year.

To assess the complete real cost to the company using the car, a factor also to be taken into account is what it could have earned with the money tied-up in vehicles, if it had invested it elsewhere? Put simply, what might the company earn if it used that moncy not in new cars but in a new piece of machinery for its factory?

What firms expect to earn from new investment will probably vary from company to company, but it is not unusual for a figure of 20 per cent, to be quoted when such questions are discussed. And the *Economist* quarterly tabulations of balance sheets suggests that, taking companies as a whole, about 18 per cent. is being earned, gross of tax, on net assets employed. On the basis of those figures, every £600 spent on cars could be expected to earn £120 a year, if invested otherwise by the company. That, in fact, is what the company is losing by spending it on cars rather than new machinery, if the rate of return on capital of 20 per cent. is the right figure to take.

Seen in that light, it would just pay the company to lease its cars and invest its own money elsewhere. A crucial point turns out to be the question of maintenance costs quoted earlier. If those are overstated, then the net difference between leasing and buying is greater and the leasing becomes more costly when other uses are considered for the capital.

That kind of argument has led one large company to refrain from using a leased car. In its own words "the premium for leasing is too high." But they agree that it becomes less high when two years' contracts are taken into account. Assuming they keep the same cars for two years, one offer they received meant a rental per annum of £210 per car (against the £275 for the particular car they wanted on a one-year leasing contract). The total rental for two years thus works out at £420. Were they to buy a car, they might expect to lose on it, on resale, about £190 after two years. But with the original £600, if invested in their plant, they could have earned in the two years about £240. On that basis they might as well lease as buy, even though, under a two-year contract, maintenance costs are paid by the using company.

Where Benefit Begins

On that basis, therefore, the manufacturer does not benefit on leasing if his normal rate of return on capital used is 20 per cent. or less. What the actual rate is depends on such factors as the particular trade in question and trading conditions at any particular time. But it also assumes that the company has the cash available; if it hasn't, or cannot get it, car-leasing schemes have obvious attractions.

The tax aspect is of particular importance. When hiring or leasing cars, probably 90 per cent. of the cost is allowable by the tax inspector as a business expense. When it comes to ownership, experience suggests that the allowable figure is only 55 per cent. That is another attraction in carhiring as distinct from car-buying. The same applies in the case of companies which hire rather than buy cars.

This investigation into leasing as distinct from buying cars does not take into account another important consideration. That is the question of maintenance headaches associated with running a fleet of sales representatives' cars, and the problem of replacements. Hired cars have the advantage of always being roadworthy and of good appearance: an important factor from the point of view of the company's reputation.

BRITISH PHARMACEUTICAL CONFERENCE, LLANDUDNO, 1958

OPENING SESSION

Echoes of other Welsh conference meetings

AN appropriate note was introduced at the opening session of the meeting of the British Pharmaceutical Conference at Llandudno on September 15, by the presence on either side of the platform of a large carboy filled with the usual anonymous red or green liquid.

On the platform, flanking the presid-

ent and chairman, were Messrs. M. H. Thomas (Conference local secretary), E. Fearnhead (Conference local vice-chairman), Harold Neville (Conference local chairman), H. G. Rolfe and Dr. E. F. Hersant (Conference general secretaries). Behind them sat Mr. H. Humphreys Jones, Dr. J. W. Fairbairn, Mr. J. B. Grosset (chairman of the Execu-

tive of the Scottish Department of the

tive pharmaceutical science. At the first meeting of the Conference in Wales— at Swansea in 1880—the chairman was W. L. Southall, whose work on materia medica was known to every student up to the end of the First World War. Its general secretary was Professor Att-field, whose distinguished career in chemistry was equally well known to the profession.

In 1891, at the twenty-eighth meeting of the Conference at University College, Cardiff, the chairman was William Martindale, whose Extra Pharmacopæia now in its twenty-fourth edition, was known and used by pharmacists and doctors throughout the world. At that meeting, the Pharmaceutical Society was represented by Michael Carteighe, who at that time had been president of who at that time had been president of the society for nine years and who conto this conservatism is the element of progress in physiological and therapeutical investigation, the search after truth, and the desire for the relief and cure of human and animal suffering arising from disease and pain. There can be no finality to these investiga-After Mr. Hudson had concluded his

introductory remarks, members of the Conference were welcomed to Llandudno by Mr. HAROLD NEVILLE (chairman of the Llandudno Urban District Council, a member of the Pharmaceutical Society, chairman of the Confernece local committee). Councillor Neville said he was proud, in his position as chairman of that council, to welcome a meeting of the Conference of that Society of which he himself was a member. The traditional hospitality of Wales had been spotlighted that year by the reception given in South Wales to the British Empire Games. At the northern end of the Principality, the Conference members would find an equally hospitable welcome. In an oblique reference to the weather prevailing on the morning of the opening session Mr. Neville said that Llandudno was, according to weather conditions, known as the Venice of North Wales and the Queen of Welsh Watering Places—"the reigning Queen."

MR. HUDSON, replying to the address of welcome, said it was a pleasure not frequently encountered that a member of their own Society should welcome the Conference into a town or city on behalf of the civic authority. Applause

greeted his remark.

Vote of Thanks MR. S. G. E. STEPHENS, proposing the vote of thanks to the chairman, said the members of the Conference had that day heard about a subject of vital importance to the British pharmaceutical industry. Former chairmen of the Conference had already in their opening addresses made some brief references to the contribution of analytical chemistry, but none had previously made it the subject of the chairman's address. The analytical chemist had contributed in no small measure to the confidence placed in pharmaceutical products, and enhanced the prestige of the British pharmaceutical industry.

Seconding the vote of thanks, MR. H. G. Moss said that to those less concerned with the academic side of the profession it seemed that, with the right approach, even the most technical subject could be made interesting and informative. Those who had not the opportunity of putting such methods into practice could be proud that pharmacy had such backroom boys as Dr. Foster.

DR. FOSTER, before declaring the session closed, made reference to the fact that there was again to be an election of six members to the Conference Executive, there being more nomina-

tions than vacancies.



Mr. G. H. Hughes (vice-president) and his daughter Miss B. Hughes, Colwyn Bay, welcomed to Llandudno by Councillor H. Neville (chairman of the local Committee); extreme left is Mr. M. H. Thomas (secretary of the local Committee).

Pharmaceutical Society of Northern Ireland) and Maurice Power (president of the Pharmaceutical Society of Ireland), Dr. H. Davis (chief pharmacist, Ministry of Health), Dr. J. C. Capper (editor of the Pharmaceutical Society's scientific publications), Messrs. A. Bull, D. C M. Adamson, G. H. Hughes (vice-president of the Pharmaceutical Society), Professor W. J. Bullock and Drs. G. R. Boyes and W. H. Linnell.

First Time in North Wales

Opening the proceedings, MR. D. W. HUDSON (president of the Pharmaceutical Society and of the Conference) said that, though the Conference had met in Wales on three previous occasions, the occasion was the first in which it had met in North Wales. It was interesting to note the names of those men who had been associated those men who had been associated with those previous occasions. The nature of the papers presented to the present meeting was a measure of the journey made along the road of progress in the development of a distinctinued in that office for a further period of four consecutive years.

Wales had been associated with some of the most distinguished men who had ever adorned the pharmaceutical profession. The papers presented at those two previous conferences had borne a striking resemblance to each other. The great majority had dealt with phar-macognostical substances, many of which had long passed out of recognition. How different it was at the present meeting. The subjects of the papers included matters of biological and engineering science, pharmacology, pharmaceutical and physiological chemistry. Only in five of the papers was there any pharmacognostical background at all.

The president then quoted the following passage from William Martindale's address to the meeting of the Conference at Cardiff in 1891:—"The tendency of the medical mind is to be conservative as the tendency of the medical mind is to be conservative as the tendency of the medical mind is to be conservative as the tendency of the medical mind is to be conservative as the tendency of the medical mind is to be conservative as the tendency of the medical mind is to be conservative as the tendency of the medical mind is to be conservative as the tendency of the medical mind is to be conservative as the tendency of the medical mind is to be conservative as the tendency of the medical mind is to be conservative. conservative as to the use of new drugs, and to know those that are used and their properties well. But opposed

CONFERENCE CHAIRMAN'S ADDRESS

Modern Analytical Chemistry in the Service of Pharmacy and Medicine

C HEMICAL analysis must have slowly developed from ancient times to have burst into full development during the ninetcenth century. One of the first recorded analytical reone of the first recorded analytical reagents must surely be Pliny's reagent for testing for iron in verdigris (a papyrus soaked in extract of gall nuts). Although modified by numerous workers Pliny's test has survived for 2,000 years and is still used in vinegar works for the detection of iron in vinegar works for the detection of iron in vinegar. The sixteenth-century practice of iatro-chemistry (the study of chemical phenomena to obtain results of medicinal value) led workers in medicine and pharmacy to be closely associated with chemical investigations. Pharmacists have been associated particularly with the examination of drugs and their preparations. Scheele (1742-86), the Swedish pharmacist most famous for his discovery of chlorine, was also author of the method of obtaining hydrogen sulphide from iron sulphide and acid, a reaction which every schoolboy must associate with chemical analysis. The French pharmacist Baumé (1728-1804) has his name associated with the hydrometer and Mohr (1806-79) is famous for his invention of the burette.

Isolating Active Constituents

During the nineteenth century it was realised that many vegetable drugs contained active principles and much effort was expended in attempts at their isolation. Pharmacists played a prominent part in that work. Notable successes were the isolation of morphine by Sertürner in 1805 and of quinine by Pelletier and Caventou in 1820. It was a natural development that estimation a natural development that estimation of the active principles in vegetable drugs should be undertaken, and gradually pharmaceutical analysis emerged as a section of analytical chemistry. From those early beginnings has sprung the analytical control of pharmaceutical products. Much may be learnt of the advances in drug analysis during the past fifty years by an exduring the past fifty years by an ex-amination of the various editions of publications such as the British Pharmacopæia and the British Pharmaceutical Codex. The B.P., 1898, consisted of monographs dealing with descriptions of official drugs and methods for making their preparations, little attempt being made to assay the products or even to test them for impurities. Some advance was made in the B.P., 1914, but it was in the B.P., 1932, that defipreparations for impurities, to standardisc them by the inclusion of assay processes, and to adopt limits for the content of active ingredients. That trend has continued until today the Pharmacopæia uses appropriate methods covering a wide field of biology, chemistry and physics for the standardisation of its preparations.

While the establishment of classical pharmaceutical analysis was due to the achievements of nineteenth-century workers, the present time, at the middle of the twentieth century, is appropriate for reviewing the work of later analysts and assessing their contributions to pharmacy and medicine. A close study of modern analytical techniques shows that their great contri-



Dr. G. E. Foster

bution to chemistry has been increased sensitivity, resulting in a reduction in the amount of material required for analysis. That goal has been reached by the development of a number of distinct analytical procedures.

Rise of Microchemistry

Nearly all the early recorded attempts to devise microchemical methods were associated with the microscope, which was used to examine small samples as an aid to their indentification, or for the observation of chemical reactions between drops of solutions on a microscope slide. That field would today be described as chemical microscopy.

The invention of the microbalance early in the present century set the scene for the great growth of what is now universally known as microchemical analysis. It was when Pregl saw a microbalance constructed by Kuhlmann in the laboratory of Emich that he realised that a slight modification would provide him with a balance suitable for organic microanalysis. Soon Kuhlmann had made a balance capable of taking a load of 20 gm, and weighing I microgm. That enabled Pregl to develop his system of microchemical analysis, particularly for the determination of carbon, hydrogen and nitrogen in organic compounds. His system, an immediate success, became used in laboratories all over the world.

The committee on nomenclature of the analytical division, American Chemical Society, has recommended that the prefixes macro-, semimicro-, micro- and ultramicro- should be differentiated according to size of sample. Macro- methods use samples of 100 mgm. or more, semi-micro-methods use samples of less than 100 mgm. and more than 10 mgm., micro- methods use samples of from 10 mgm. to 0.1 mgm. and ultramicro- methods use samples of less than 0.1 mgm. Those recommendations have been widely accepted.

How and Why it Began

In the period between the 1914-18 and 1939-45 wars the organic chemist became increasingly interested in the hormones and vitamins. Those substances occurred in minute amounts in nature, and much effort was needed in order to isolate even a few mgm. before chemical research on composition and structure could commence. Many persons used to handling gm. or kilos of aneurine hydrochloride, ascorbic acid, riboflavine, progesterone, testosterone, cestrone and related products may not realise that thirty years ago those compounds were available only in small quantities or had not yet been isolated.

structure could commence. Many persons used to handling gm. or kilos of aneurine hydrochloride, ascorbic acid, riboflavine, progesterone, testosterone, estrone and related products may not realise that thirty years ago those compounds were available only in small quantities or had not yet been isolated. Those were stimulating days and I can well remember the cwt. of yeast and rice polishings worked up for vitamin B₁, the crates of oranges and lemons for vitamin C, and the gallons of urine, which arrived in milk churns from maternity homes, for extraction of sexhormones. The yields obtained can be judged from the fact that about 5 gm. of vitamin B₁ was isolated from a ton of rice polishings. How then was it possible for the compositions and structures of those products to be determined and their syntheses achieved? What enabled such work to be carried out was the development of microchemical analysis. As a result, those compounds, obtained by total or partial synthesis, are now found in hospitals, surgeries and pharmacies throughout the world.

Microchemistry consists of ordinary chemistry carried out on a small scale. Some drugs are very expensive, particularly when first introduced into medicine, and their analytical control may on that account be costly. Microchemical analysis enables the drug needed for analysis to be reduced to about 1/20th of that required by macromethods, and a substantial reduction in the cost of analysis is thereby achieved. The advantages of micro-methods were quickly appreciated by the British Pharmacopeia Commission, for in the monograph on ergotoxine ethanesulphonate, B.P., 1932, it is stated that methods of microanalysis, if of equivalent accuracy, may be substituted for another determination. Though not

strictly analysis, the use of a microbalance to weigh International Standard preparations for use in biological assays effects considerable savings.

The scope of microchemistry in pharmacy is emphasised by the human doses of a number of potent drugs. Generally one dose is the amount of drug contained in one tablet or a single-dose ampoule of injection. Obviously a large number of products will be required if analysis is to be attempted by macro-methods. Where only single tablets or ampoules are available, microchemical techniques afford the means of analysis.

Without perhaps realising it, workers engaged on pharmaceutical analysis make considerable use of microchemical methods. The well known limit tests for lead and arsenic are obvious examples. The amounts of metals detected are well within the *ultramicro*- range; in some the sensitivity is of the order of 1 part in 5 millions.

In the alkaloidal field volumetric and gravimetric *macro*-methods are used largely for the assay of vegetable drugs. For the assay of alkaloidal preparations containing small doses, however, micro-chemical techniques depending on specific colour reactions are often used.

The accurate filling of ampoules is important and an apparatus has been described for the precise measurement of the volume of an injection in a single dose container, usually holding 1 mil of solution. The basis of the method is the direct measurement of the volume by use of a calibrated capillary tube, the liquid from ten determinations being collected in a burette for the purpose of assessing the average volume per ampoule. Reference may finally be made to the problem of filling insulin zinc suspensions. Variations in the suspension filled may be checked by taking samples of filled vials during the entire filling operation of the bath and carrying out nitrogen determinations by the micro-Kjeldahl method.

Microbiological Assay

For many years pharmacologists have standardised biologically drugs for which no established chemical or physical assays existed. For that purpose experimental animals such as rabbits, guinea pigs and especially rats and mice have been used. In more recent times, however, it has been found that, like animals, many micro-organisms need certain nutritional requirements for their growth. By the choice of suitable micro-organisms those requirements may be exploited for analytical purposes. Those new analytical tools have earned the description of "micro" both on account of their physical size and for the ultramicro-quantities of antibiotics, vitamins and amino acids which may be estimated by their aid. No expensive animal houses are required, costs of animals and their feeding stuffs are eliminated and quite simple apparatus, such as is found in a bacteriological laboratory, is all that is needed. The assay of a vitamin using rats may take six weeks; the same assay may sometimes be carried out microbiologically in as many days. It is understandable that micro-biological

assays have replaced many earlier animal techniques.

Two Procedures

The procedures of importance in pharmaceutical analysis fall into two categories, concerned with antibiotics and essential growth factors respectively, according to whether the sub-stance examined inhibits or stimulates the growth of the test micro-organisms. It is convenient to refer to them under

scparate headings.

- The clinical import-ANTIBIOTICS. ance of antibiotics depends upon their ability to combat the growth of bacteria, and assay procedures are designed to measure that antibacterial effect. The potency of an antibiotic is usually estimated by comparison with that of a standard preparation to which an arbitrary potency in units is allotted. Standard preparations of important anti-biotics are available from the Depart-ment of Biological Standards, National Institute for Medical Research, London. The essential requirements for an assay are a strain of bacteria highly sensitive to the antibiotic under test and a culture medium in which the micro-organisms readily grow. Portions of the culture medium inoculated with bacteria under standard conditions are treated with varying, but accurately measured, amounts of antibiotic and incubated; the extent of bacterial growth in the resulting cultures may be used to assess the potency of the antibiotic. That seemingly simple procedure has proved difficult to control in practice and many modifications have been described. In fact, no one modification is satisfactory for all purposes but three have become established and are widely used. They are dilution, turbidimetric and diffusion methods.

Falling dilutions of the antibiotic to be assayed in suitable nutrient medium are set up in tubes or plates and inoculated with equal amounts of the test organism. Controls containing no antibiotic are included and those, together with the dilutions, are incubated and inspected at intervals for bacterial growth, and the minimum concentration of antibiotic which inhibits growth is recorded. By simultaneous tests upon the standard preparation and the un-known potency of the latter is esti-

mated.

In the turbidimetric method the inhibition of bacterial growth is estimated not by a graded diminution in growth which extends over several tubes, in which it is usual to use liquid nutrient medium. Turbidities, due to bacterial growth in the medium, are measured and a curve is drawn relating turbidity to concentration of antibiotic. A calibration curve, constructed from readings obtained similarly using the standard preparation, is employed for assessing the potency of the sample tested.

In diffusion methods a solid nutrient medium inoculated with the test organism either in bulk or on the surface is used. A solution of the antibiotic is applied to a small area of the medium, which is incubated at once or after remaining at a low temperature for some hours. Growth of the organisms in the

vicinity of the area of application is inhibited and the distance which the inhibition extends from the latter is related to the concentration of the antibiotic. The seeded medium may be allowed to act by vertical diffusion but the assay is more frequently carried out by horizontal diffusion, the antibiotic solution being applied to a seeded plate and a circular zone of inhibition obtained. The diameter of the circular zone is directly related to the logarithm of the antibiotic concentra-

ESSENTIAL GROWTH FACTORS.—Not until recent years were the nutritional requirements of micro-organisms used for the assay of vitamins, especially of the B group. The principle of the assay is similar to that used for antibiotics except that stimulation instead of inhibition of growth is measured. A suitable medium containing all essential growth factors except that to be assayed is inoculated with the test organism. Aliquots of the seeded medium are placed in a series of tubes to which suitable amounts of the solution of substance under test are added, the mixtures adjusted to standard volume and incubated. After incubation the bacterial growth in each tube is measured. A calibration curve is prepared carrying out a similar experiment using a solution of the standard preparation instead of the substance to be assayed and the potency of the unknown is calculated from the readings.

Assessment of bacterial growth may be carried out by the turbidimetric and diffusion methods. The latter affords zones of growth or "exhibition" instead of inhibition. The most popular methods, however, are acidimetric, made possible by the use of microorganisms, such as strains of lactobacillus, whose growth is accompanied by the production of lactic acid. Under favourable conditions the amount of lactic acid formed is proportional to the bacterial growth, which may be assessed by titration of the acid. Higher organisms, such as fungi and yeast, are sometimes used, and the dry weight of the organism produced used as the re-

Applications of Microbiological Assays

The moment a new antibotic is discovered microbiological assay becomes an essential tool for development of the discovery. It is most valuable for following the extraction of the antibiotic from the crude fermentation liquors and for controlling the various stages of purification until it is finally isolated in a chemically pure form; it is indispensable for the assay of its pharmaceutical preparations and for studying their stability and it may be used for investigation of the distribu-tion, destruction and excretion of the product when administered to animals and man. The technique has played an outstanding part in the development of chemotherapy as an aid to screening antibiotics against a wide spectrum of bacteria. The phenomenal growth of the antibiotics industry during the last ten years has certainly resulted in the diffusion method of assay becoming one of the most widely used analytical

The microbiological assay of vitamins has not enjoyed such widespread application but has some notable successes to its credit. That *p*-amino-benzoic acid, inositol, nicotinic acid, pantothenic acid and folic acid were essential for the growth of some microorganisms was known before their need in animal nutrition was appreciated.

In 1940–41 Peterson and co-workers reported the presence in liver extract of a factor active in promoting the growth of *Lactobacillus casei*. That led to the employment of microbiological assay as a research tool in that field, Liver extracts were found to contain several growth stimulating factors for strains of *lactobacillus*. No doubt that work contributed substantially to the identification of folic acid as the *L. casei* factor and of vitamin B₁₂ as the principle active in the treatment of pernicious anæmia.

The discovery that the bacteriostatic action of sulphanilamide is due to its interference with the utilisation of p-aminobenzoic acid by susceptible organisms gave rise to the conception of antimetabolites and to a new approach to chemotherapy. It was evident that any substance which prevented the use of an essential growth factor by a pathogenic organism had potentialities as a chemotherapeutic agent. Microbiological assay techniques can readily be applied in the search for antimetabolites.

Chromatography

The application of analytical techniques, including *micro*-methods, is largely dependent upon the successful preliminary separation of the substance to be determined from other ingredients of the sample under examination. Of modern procedures of separation none has made a greater contribution to analytical chemistry than has chromatography. To effect separation a laboratory column can deal with only a small load of material. On the other hand, there is practically no lower limit to the amount of material examined, for it is the sensitivity of the method of detection which determines the amount used. The procedures in general use may be classified as (1) adsorption chromatography, (2) ionexchange chromatography, (3) partition chromatography, and (4) gas-liquid chromatography.

chromatography.
ADSORPTION CHROMATOGRAPHY. Adsorption chromatography depends upon the varying adsorptive power of some solids for the substances under examination. For analytical purposes it is sometimes convenient to obtain a continuous record by measurement of some physical property (such as the refractive index) of the eluate leaving the column; that is known as frontal analysis. To develop the column with a solution of a substance more strongly adsorbed than those to be separated is known as displacement development. Another device for increasing the efficiency of column separations is gradient elution, in which the composition of the solvent entering the column is

gradually changed.

In the pharmaccutical field adsorption chromatography has been used extensively for the separation of natural

products, an example being the part it played in the discovery of vitamin B₁₂.

ION-EXCHANGE CHROMATOGRAPHY. — Base exchange, or cationic exchange, has been the subject of extensive investigation since the middle of the nineteenth century. Developments have led to the preparation of a range of synthetic resins having free acidic or basic groups in their molecular structures.

PARTITION CHROMATOGRAPHY.—When an aqueous solution is shaken with an immiscible solvent until equilibrium is attained the ratio of the concentrations of the solute in the two phases is a physical constant, known as the partition coefficient of the substance concerned. The difference between the partition coefficients of amino aeids was utilised to effect their separation when shaken with a battery of extractors containing two immiscible solvents. It was found that more efficient solventsolvent extraction could be achieved by use of columns of silica gel holding about 50 per cent. of water, placing the sample under test on the column and developing with an immiscible solvent. Other materials, such as starch and cellulose powder, have been used for holding the stationary phase of water and the process has become known as partition chromatography. Later it was discovered that sheets of filter paper could be used to support the stationary phase and that gave rise to paper partition chromatography, which is probably the most versatile method for analytical work on a micro-scale, and has been used extensively for the solution of problems in pharmacy and medicine.

Colourless substances are usually located by spraying the paper with a reagent that affords a coloured reaction product with the compounds under test. Antibiotics may be detected by laying the damp paper on an agar plate, seeded with suitable micro-organisms, and subsequently incubating the plate. Zones of inhibition on the agar coincide with the positions of the antibiotics on the paper. Compounds containing radioactive tracers may be detected by bringing the paper in contact with a photographic plate which is then de-Paper chromatography has been used to measure the intensities of the spots upon the paper or by their removal from the paper by elution with a solvent and use of micro-chemical analysis. Examples of applications in the pharmaceutical field have ben in the study of the glycosides of digitalis, the identification of the polymyxins, the detection of biologically active fractions of liver extract, and the separation and identification of the different penicillins. Perhaps the greatest achievement of paper chromatography, however, is in establishing the structure of the insulin molecule.

GAS-LIQUID CHROMATOGRAPHY.—The work has been extended to include liquid-gas systems in which the stationary liquid phase, as a substance of highboiling point and good stability, is supported on a column of incrt solid carrier, such as Kieselguhr, and the mobile phase is a gas. The sample under test is blown along the column by an inert gas and the substances, separated according to their volatility, arc detected

by a suitable device at the end of the column. It has been found advantageous to maintain the column at elevated Volatile organic acids temperatures. and bases may be detected by use of an automatic titrimeter at the exit but sensitive physical detectors, giving a continuous record of the thermal conductivity or density of the emergent gases, are now widely used. The new technique has been described as gas-liquid chromatography, vapour-phase chromatography or gas chromatography. A sample of no more than a few mgm. is required, and as little as 0.1 microgm, of test material in 1 mil of carrier gas ean often be detected. So far the technique has been used little in the pharmaceutical field, though it was recently employed for the detection of impurities in chloroform, B.P. Its use in the examination of essential oils is an obvious application.

Instrumentation

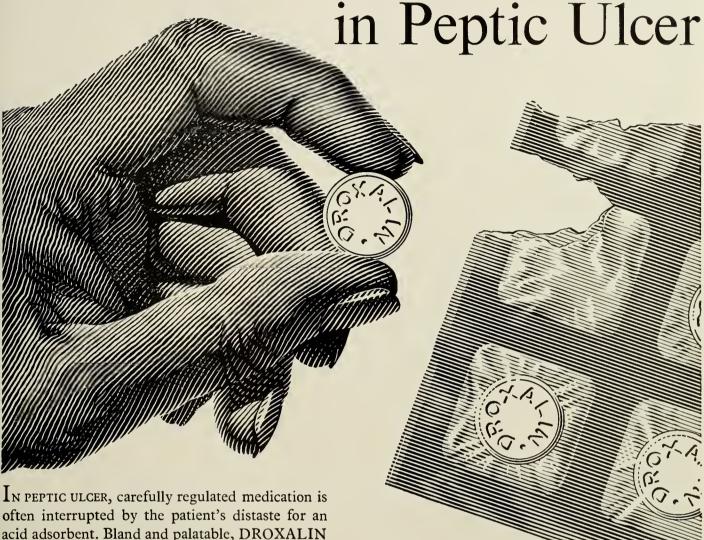
Any review of modern analytical chemistry would be incomplete without some reference to instrumentation. The thermionic valve and photo-electric cell have extensive applications in the design of scientific instruments and any chemical reaction capable of producing a suitable signal affords scope for instrumentation, using servo-mechanisms to record chemical and physical changes with a new precision.

Full use has been made of instrumental methods in the pharmaceutical industry, where the control laboratories employ spectrophotometers, pH meters, polarographs, flame photometers, fluorimeters and many other instruments. That has resulted in greatly increased sensitivity and a corresponding decrease in the size of samples examined. Radioactive elements have been used widely as tracers for metabolic studies in biochemistry and medicine, but so far the technique has been little used in pharmaceutical analysis, though solutions of sodium radio iodide (131 and sodium radio phosphate (32 P), requiring the use of a Geiger-Muller counter for their standardisation, are included in the RP 1958

The pharmaceutical industry consists essentially of research leading to the discovery of a new drug, the purchase of raw materials needed for its manufacture, pharmaceutical development resulting in its satisfactory presenta-tion, the production of the product and its preparations, advertising its availability, and finally its commercial distribution. In the pharmaceutical field no organisation can operate successfully without the support afforded by the analytical chemist. That this Conference is aware of the importance of analytical ehemistry in pharmacy has been shown by your election of an analyst to be your chairman this year. I pre-fer to consider that as a tribute to the army of analysts, particularly the young laboratory assistants upon whom the burden of much routine work falls, who ceaselessly labour in the control laboratories of our pharmaceutical factories. They safeguard the interests of the prescriber, the pharmacist and the patient and do so much to keep British products in the vanguard of pharma-

ceutical progress.

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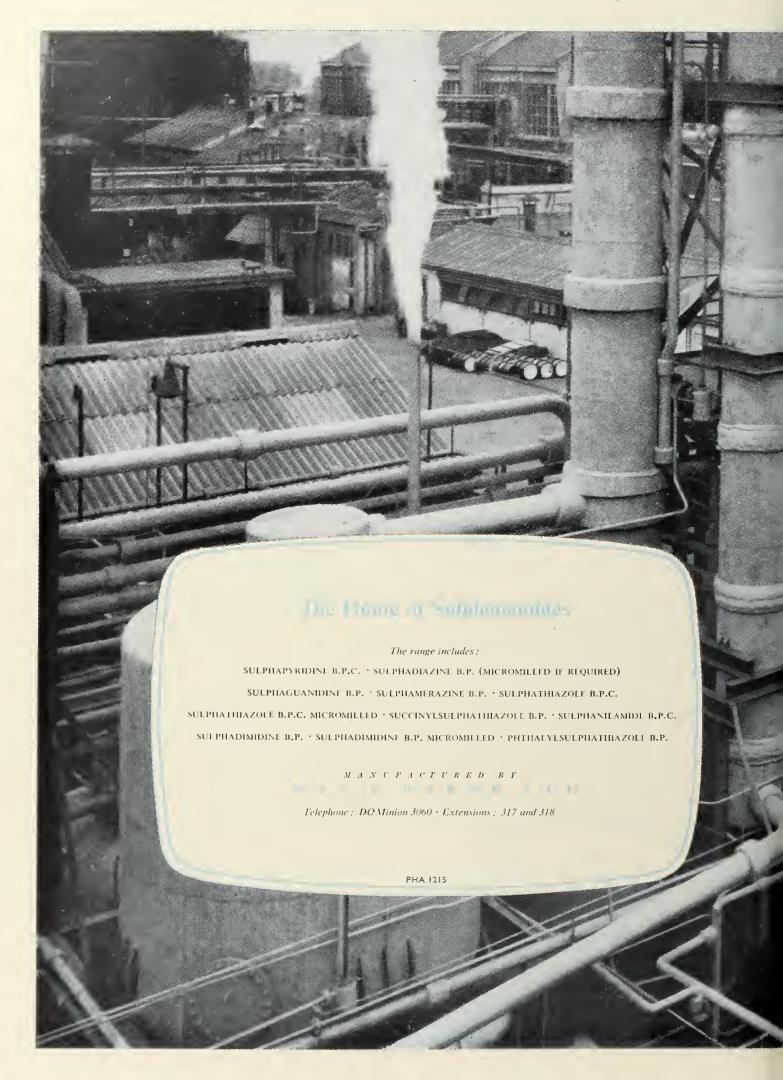
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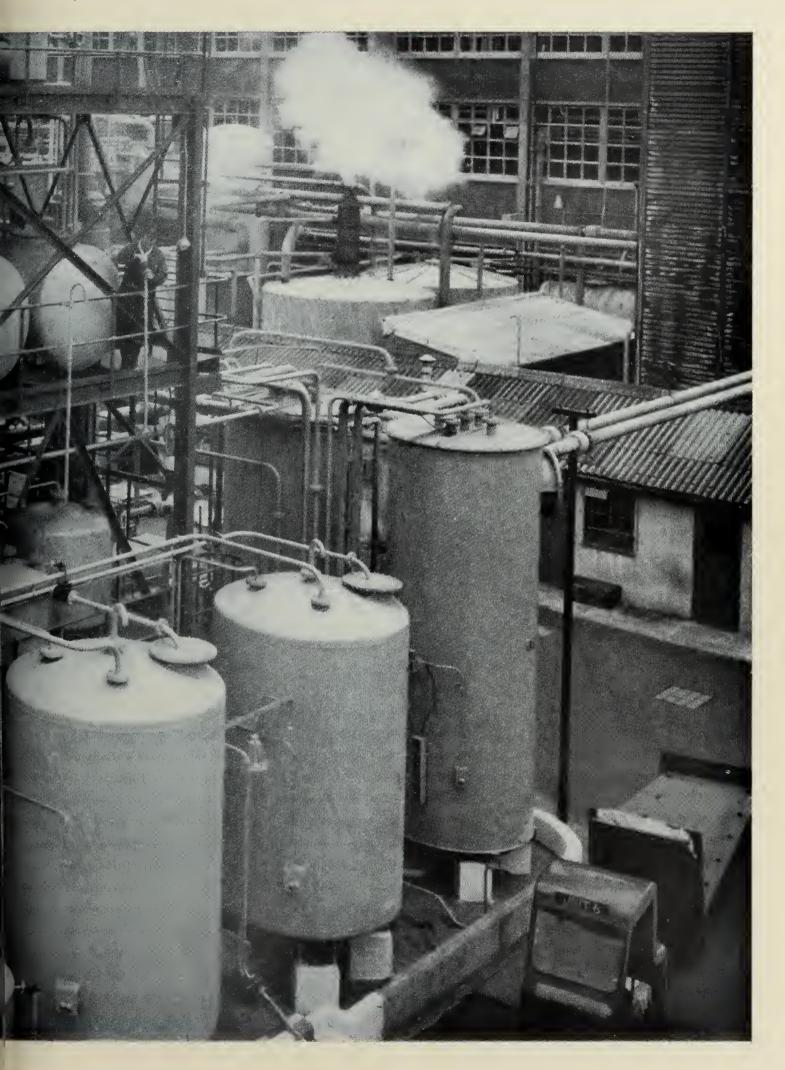
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PHARMACEUTICAL CONFERENCE, LLANDUDNO, BRITISH 1958

FIRST PROFESSIONAL SESSION

The pharmacist's responsibilities to his post-graduate student

WELCOMING over 300 mcmbers to the first professional session, Mr. D. W. HUDSON (president of the Conference) said that it was an open discussion on all aspects of a topic important to all engaged in retail pharmacy and to all those responsible for teaching the those responsible for teaching the young students of pharmacy. The pharmacist's responsibilities to his post-graduate student were wide, and the views of the teacher of pharmacy and the retail pharmacist that were being presented by the authors of the two papers, were not the only aspects of the subject. He hoped that delegates; speaking in their personal capacities, would bring other facets to light.

September 20, 1958

The two authors then presented their papers. First came:-

The Academic Viewpoint

J. C. PARKINSON

[Abridged]
A REVIEW of the development of the pharmaceutical apprenticeship system shows that the changes taking place at present are no sudden whim of the Society's Council, but are part of the gradual change taking place not only in pharmacy but in all the scientific professions. For such changes to be effective they must not merely cater for the situation as it exists today but must allow for developments in the foreseeable future. In the nineteenth century the most important part or, indeed, the sole education of the intending pharmacist was an apprenticeship of some five to seven years. Such an apprenticeship was usually started at the age of fifteen, and a person would thus not be eligible for qualification before the statutory age of twenty-one or even later. During that long apprenticeship the student carried out practical work in all aspects of his profession, as most pharmacies, in those days, did compre-hensive work. The basic sciences, which now contribute so much fundamental knowledge to be applied in pharmacy, were not of such great value to pharmacy as they are today. The preparations which appeared in the earlier pharmacopæias were within the scope of most private pharmacies; they required no elaborate machinery, there were few standards for galenical preparations and assay procedures were simple or even absent. Furthermore, the conscientious pharmacist preferred to handle his own crude drugs, since adulteration was rife-the drug houses were not always trusted as they are today. At the end of such an apprenticeship, the student would not necessarily become qualified immediately but would often gain further experience as an "improver" before presenting himself for examination, and so he might well be twenty-four years old before qualification.

The introduction of college training first took the form of a short course in which the experienced student at the end of his long apprenticeship was ac-

quainted with some modicum of scientific knowledge which completed his education. In other words, the student was fully trained before attending col-lege, and the function of the academic training was merely "to put the polish on the bottle." Judging from the stories which I have heard my father recount, the teacher of pharmacy at the turn of the century had to put up with behaviour from his students such as some pharmacists in practice today suffer from their trainees! During the present century we have seen the period of academic training divided into two parts—the Preliminary Scientific, Intermediate or, as it is now termed, the Entrance examination, and the Qualifying examination. The changes in the first part of that examination scheme reflect changes which have occurred in education generally from the time when only a limited number of entrants to the scientific professions continued their studies after school, to the present day when it has become the rule rather than the exception for students to remain at school until the age of eighteen. Those years in the sixth form replace the part-time study that was associated with the three- or four-year apprenticeship of the 'twenties and thirties, and it should be noted that the overall time spent in training was not altered, i.e., a four-year apprenticeship was replaced by two years' Intermediate work at school or college plus a two-year apprenticeship. One result of the emergence of a full-time Intermediate course was the recognition that a break in the student's academic training was undesirable; students have been encouraged to complete their sixth form studies at school and then proceed direct to college for their final

Pharmacy "a Technology"

During the time that those changes were taking place in the Intermediate examination, the character Qualifying examination was also changorganization was also changering. Gone is the one-year Chemist and Druggist course, followed by an examination that was more a test of the student's memory than of his ability to reason scientifically. There remained the pharmacoutical Chemist the Pharmaceutical Chemist course of two years, culminating in the examination which we know today, in which the student's knowledge of scientific principles and their applications in pharmacy is tested. Pharmacy as an art has changed to pharmacy as a technology, and the outcome is that the student's academic training proceeds logically from school right through to a final degree or diploma. A break in such a course can seriously interrupt the student's studies, and so it is be-coming more usual for the practical training to follow the academic course. That relationship of academic and practical training is similar to that found in medicine and engineering but, in the former profession the clinical work runs parallel to the final years of academic study and it does not interrupt the academic course.

Some of the changes that have occurred in retail practice during this century are indicated in the table:

1900	1958	
All crude drugs in pharmacies.	Few drugs seen in retail practice; mainly spices, condiments and herbs.	
Small-scale galenical preparations common.	Very rarely possible.	
All medicines dis- pensed extemporan- eously. Simple medicaments easily understood.	Majority of products dispensed ready-made. Complex organic compounds and bio-	
Limited knowledge of therapeutics and pharmacology.	logical products. Vast accumulation of information on physiological function and chemotherapeutic action.	
Few simple reference books — long lived.	Multiplicity of stan-	

Practical Training Today

The Pharmaceutical Society's examination regulation No. 17 requires that a student shall "... satisfactorily perform, under the direct supervision of a pharmacist, as his sole pupil, a course practical training of not less than one year . . . in one or more of the following places: a set of premises registered under Part 1 of the Pharmacy and Poisons Act, 1933; a manufacturing pharmaceutical laboratory; the pharmaceutical department of hospital or similar institution." In the draft articles of pupilage which have been in force until now, there was a set of rules which required, inter alia, that the pupil should acquire experience in the manipulation of pharmaceutical apparatus in common use; the recognition, by sensory characters, of the chief crude drugs and chemical substances used in medicine; the preparation of galenicals illustrating the principles in-volved in the commoner pharmaceutical operations. It is doubtful if many practising pharmacists would claim to have the ability or facilities to comply with those three rules today. At one time such subjects could be taught in retail premises and there is a small, but declining, number of hospitals where such experience may still be gained. Furthermore, that type of training is included in one or more of the subjects of the Qualifying examination and again illustrates the change of emphasis from the art or craft to the technology which is pharmacy today. If we are to take those rules as a guide, it is the remaining sections, dealing with

prescription reading, day-to-day dispensing and the presentation of modern ethical products that need to be covered in the one-year practical course.

It will be well to consider the type of trainee with whom the practising pharmacist will be expected to deal. The student probably remained at school until he was eighteen or nineteen and having received an education equivalent to University entrance standard has proceeded to a school of pharmacy where the final course is designed to make the student think for himself and attain a degree of self-reliance.

The academic course demands a de-tailed knowledge of the chemistry and pharmacology of the drugs now in use, and although a number of crude drugs studied in pharmacognosy has been considerably reduced, the time devoted to that subject must still allow the remaining important drugs to be adequately described. The importance of parenteral medication has necessitated the allocation of a considerable amount of time to the study of microbiology and sterilisation. Consequently, the time available for dispensing is little more than in the old Chemist and Druggist course when the student came to college already a competent dispenser. Thus it will be seen that the criticism frequently heard now that "these chaps can't dispense" as applied to postgraduate trainees is partially true. In the past it has not been the function of the schools of pharmacy to turn out the "complete pharmacist." It is the duty of the supervisor to improve the student's practical technique, and in doing so he should not belittle the student's theoretical knowledge but rather encourage the student to apply that knowledge to his work. To that end a well-equipped dispensary should have text-books of pharmaceutics and pharmacology or therapeutics which, together with the Extra Pharmacopæia and the various standard text-books plus a reference system in which literature on ethical products is filed, will make the basis of a useful library. The traince must be encouraged to use his initiative and the supervisor must be open to accept and develop new ideas.

Human Relationships

The relationship between the pharmacist and his staff on the one hand and the doctor, the patient or customer on the other is not simple and cannot be suitably dealt with in any other place than the retail or hospital phar-The supervisor would be well advised to spend some time in explaining to the trainee just how those people should be approached.

The suggestion that business training should be included in the academic syllabus has been made from time to time but has not received the support it deserves. That may be due to a mistaken idea that it means a little bookkeeping and elementary accounting, but in fact it is an important facet of a pharmacist's training. No matter in what branch of pharmacy a man and woman finally practise, they can usefully apply a knowledge of relationships between employer, employee and customer, of stock and financial ac-

counting systems, costing, publicity and an elementary idea of law as it affects retail trading. Many pharmacists will point out that they do not feel capable of training a student in those aspects of his career but there are other ways, such as evening classes or correspondence courses, by which the student can be encouraged to gain useful know-

Future Developments

The present practical training of a young pharmacist is in itself preparation for the future and in that way the supervisors of today can influence the progress of the profession. It must be admitted that there are some retail and hospital pharmacies that leave a good deal to be desired. One wonders what sort of practical training the pharmacists in those sub-standard premises received, and it is tempting to suggest that rather than let such a rot spread further it would be as well to take the training out of the hands of the practising pharmacist. It is to be hoped that such a step will never be necessary but it is only by the efforts of pharmacists in responsible positions in retail and hospital practice that the high standards of pharmacy in this country will be upheld.

It is expected that by spreading the qualifying course over three years, there will be considerably more time for the teaching of pharmaceutics and in that time much more may be done to bring students into touch with the practice of pharmacy instead of turning out students with considerable academic knowledge but little idea of considerable how to apply it. However, the need for practical training will still remain and the inclusion of quasi-professional topics in the final course will not absolve the practising pharmacist from his responsibility for ensuring that the future generations are competent practitioners and fully aware of their responsibilities to the public and to their sponsibilities to the public and to their profession.

The other introductory speaker out-

The Retail Problem Today

G. T. ESPLEY [Abridged]

THE atmosphere of apprenticeship is undergoing a remarkable metamorphosis, and if we are going to do justice to the next generation of pharmacists, we must project our thoughts to the future, so that during the present time we can train post-graduate students to be prepared for what lies ahead of them. A student now has to gain practical experience in an approved place for one year (with a minimum of six months consecutively) and then sign an affidavit. What a pitfall, and yet what an opportunity for both apprentice and apprentice-master. Let us take a closer look at the present-day post-graduate student, in comparison with the appren-tice we all know so much better. After all, at twenty-one and with a degree or diploma to his credit he is completely different from his sixteen- or seventeen-year-old counterpart. At one time we enrolled our students at an early age, a tractable and malleable age when the mind was fully receptive; but now



Mr. and Mrs. A. Broadwell, Bebington, examine their programme.

we have the adult to deal with, a mind full of far more academic learning than most of us ever possessed, and we must re-orientate our thoughts and our approach to this new problem. We may or may not like the modern trend in education, and pharmaceutical educa-tion in particular, but let us give the new scheme an honest trial. If it works it will be a big advance in our pro-fessional and our business status. If it fails, then without in any way apportioning the blame, we shall have to re-consider the whole problem, bearing in mind the comments and reactions of the new generation of pharmacists.
With the post-graduate apprentice,

many pharmacists on the one hand assume (quite wrongly) that here is a nearly fully-trained person, and on the other hand the apprentice assumes that he knows it all except for the irksome regulation about having "to waste time i ' in a shop or other establishment for a year. Both are quickly disillusioned. Both need the maximum tact and patience.

It is essential for both apprentice and master to build up confidence. Prejudices must be overcome and the postgraduate apprentice should disabuse his mind about "marking time" for a year, or thinking that he is being considerably underpaid for his far greater academic knowledge compared with his master. Granted that there may be a half-truth here, he will speedily realise that with all his scholastic training, scientific knowledge, and hard-earned degree or diploma, he can probably dispense less than half the prescriptions he meets in his first week in the average dispensary.

So the first lesson for him, and for us, to learn is that the two essential ingredients in becoming a registered pharmacist—the academic and the practical—are complementary to each other. Theoretical work and practical experience are both necessary in our

profession.

Prospects in Retail Pharmacy

The student should be reassured, if that is necessary, that there is a tre-mendous future in a logical development of the present retail pharmacy. Any forcbodings that he may have should be dispelled at once, but the sooner he learns that besides the professional dispensing side of the business, there is an equally important retail side, the better it will be. He is likely to migrate consciously or sub-consciously to the dispensary because

therein he can demonstrate his knowledge and skill. He will probably tend to shun the counter, endeavouring to the best of his ability to avoid any admission of ignorance in front of other members of the staff and the public. Here tact is needed, and the solution of that problem can be achieved more easily when he realises that retail pharmacy today, and so far as I can visualise, for many years to come in this country, must inevitably come in this country, must inevitably have the professional and the commercial running side by side. Point out that at present, it is almost impossible, except in few select sites, for a purely professional business to exist, bearing in mind that most of us rely almost 100 per cent. on the National Health Service for our dispensing, and remembering the low return which that brings compared with many countries abroad.

Use of Academic Knowledge

However, that does not preclude him from using his academic learning in his contacts with customers, and in fact he should be encouraged to bring that knowledge into play in assessing the value or otherwise of the many preparations which he will be handling for the first time. A newly-qualified pharmacist applying for a position not long ago told me that a lecturer at college had told the class that "retail phar-macy is the lowest of the low." That opinion among staff at certain colleges that retail pharmacy is "not quite nice" is fortunately not the general outlook, but all the same it is an idea that should be immediately eradicated. Not only the apprentice-master, but all connected with pharmaceutical training should strive to imbue in each student self-respect, confidence and pride in his social, professional and business world. Only in that way can we achieve the best possible progress in pharmacy. The saying attributed to Machiavelli—"He who divides, destroys"—is as appropriate here as in many other spheres, and surely our whole aim is for a united profession and not one fraught with internal dissensions. Pharmacy will be all the stronger when every pharmacist, young or old, is proud to be a pharmacist, whether in retail practice or elsewhere, and that self-respect will bring added public respect. It is one of our duties to bring that truth home to our apprentices.

Business Relationships

As time separates the student from his purely academic studies, he will begin to see things in proper perspective, and to realise that human business relationships play a vital part in his life. First, there is his professional relationship with the public. The man-in-thestreet judges pharmacists as a whole by the knowledge and confidence he has in his local chemist. Are we all ambassadors of pharmacy? Do wc, can we, in one year of apprenticeship sow the secds for the continuation of the tradition of being the confidant of the sick? It is in that context, possibly more than any other, that our future apprentices will have most difficulty. Earlier generations of pharmacists, including ourselves, had two, three, or four years during our youth to assimilate that pharmacist-customer relationship. It can come only with time and experience, and it is a big responwe can in the twelve months at our disposal. One pitfall which our apprentice should avoid is never to approach the simplest query with the "professor in a white coat" outlook. His natural tendency may easily be to do so begre of his greater be to do so, borne of his greater scientific training and knowledge, but that must be adjusted and used to win the confidence of his customers and not to estrange them.

Personal contact with customers cannot be over-emphasised to him. During his training he will be supervised in the dispensary, but in due course as a pharmacist he will have to do the supervising, even if not all the dispensing, so as to leave himself time to make contact with as many customers as possible. His customers will have infinitely more confidence if he personally has a word with them when handing out the medicine, than if a junior assistant hands it out.

What of his relationships with other professional men? He can apply his knowledge of pharmacology, the importance of which has increased enormously in recent years, to his professional dealings with doctors, dentists and veterinary surgeons. He can discuss the composition, action and uses of the new drugs which are being introduced so regularly, with knowledge at least equal, if not superior, to theirs.

Third, what about his relationships with professional men on the business side—the lawyers and accountants, with whom he will be having dealings in due course? The business curriculum in the new syllabus may include some rudimentary approach to those problems, but it is likely to be in the hard school of experience, either during or after his apprenticeship, that he gains his knowledge. Bring to his notice the "code of ethics" and the fact that it was evolved for the improvement in status of all in our profession. Besides his responsibility to the public, he will have an equal responsibility to his pharmaceutical colleagues and other professional men.

Pharmaceutical Politics

I have no hesitation in suggesting that pharmaceutical politics, unlike Parliamentary politics, should be discussed with your apprentice. There has been too much apathy for far too long. Try to instil a broad balanced outlook in pharmaceutical affairs, embracing the professional, business, scholastic and retail branches of our vocation. He may be biased in one direction before he comes to us, but let us not try to alter his opinion too violently in the opposite direction. Encourage him to



ATTENDING TO DELEGATES: Three local Committee members attending to delegates at the office on Sunday atternoon. (Left to 11gh.) M.s. Bryn Jones, Mrs. B. Hunt, Mrs. R. A. Hughes. At right: Three from the North East get together, Messrs. J. Gilliland, Winterton; G. W. Robson, Durham; and G. Sillett, Middlesbrough.

widen his horizon to the maximum by attendance at Branch meetings where he will meet fellow apprentices and Visiting pharmacists. speakers bring differing viewpoints, and, if he is fortunate, he may hear one or two members of Council occasionally, so that when he starts to vote, he will at any rate connect a face with a name, which is more than can be said for the majority of our colleagues. Above all, he will have the opportunity of engaging in free and unrestricted discussion, when the experience of older pharmacists can be intermingled with the enthusiasm of youth for the ultimate good of all.

" Ethicals "

One of the subjects in which you will need to give the student considerable instruction is that of ethical preparations, and I fail to understand why our colleges so studiously avoid any reference to that branch of dispensing. Those items form such a large proportion of our dispensing today that it seems futile for our educationalists, for whatever idealogical considerations that are involved, to ignore the march of time. I hope that that omission will soon be rectified.

So far I have dealt with the less tangible aspects of our apprentice's training: the mental approach and necessity for mutual confidence, human re-lationships and his attitude towards his fellow-men, whether customer or otherwise; but what about the economic aspects and the business training that is essential for him to survive in this highly competitive world?

Business Training

Under this heading we must include staff control, ordering, stock-taking, stock control, displays, advertising, accounts and book-keeping. Once again you may find that your apprentice will have to re-orientate his thoughts and approach to some of the subjects, depending on how the new regulations have been implemented in the colleges. Do not for one moment think that I am doubting the wisdom of including some elementary business training in the new syllabus; it is an excellent idea if it is properly done. Only a successful practising business man is fully competent to deal with that subject. I hope that the colleges will not entrust that small, but important addition to their curriculum, to some unfortunate lecturer who happens to have an hour or two to spare each week, and whose only experience of retail pharmacy may have been many years ago and possibly refreshed recently from text-books. However well the subject has been put across to the student in the lecture theatre, it is only when he begins to rub shoulders with the problems in retail pharmacy, that he can add the finesse which no amount of theoretical training can give him. However strong his professional leanings may be, the more knowledge and experience in commercial and retail work that you can impart to him, the more chance he will have to succeed.

Statistics, notoriously, can be used to prove almost anything, but it is interesting to note that less than one-

third of the average turnover of all pharmacies in this country, is derived from N.H.S. dispensing. encourage our apprentice still further to assimilate every scrap of knowledge about retail practice from you, his apprentice-master during his one year's training. He will have learnt quickly, we hope, the elementary business principles of a clean and tidy shop, stock to hand where and when required, well dusted counters, sparkling shop rounds (when these are to be seen nowadays), attractive and clean window displays, preferably priced, and a neat well-maintained shop front, not forgetting a liberal dose of courtesy at all times, even two minutes after closing time when an urgent prescription appears. Tell him that after professional ability and a courteous service, stock control can be regarded as the next vital necessity for making all the difference between success and failure.

Just as in the professional dispensing side of business it is essential for our apprentice to cultivate confidence be-tween himself and his customer, so in the commercial sphere he must at all times do everything to enhance that confidence, and nothing to undermine it. On occasions, some free advice to a customer will engender far more goodwill than an extra shilling or two in the till. Slick salesmanship may pay dividends, but not for long. Goodwill, like a good name, is got by many actions

and lost by one.

If you can gain his interest in an intelligent approach to work study, it could be of lasting benefit to him. In the past, there has been a good deal of ill-advised thought and prejudice about the subject, but it is only plain common sense, applied, so far as shops are concerned, to simplifying the work of the staff (with which he should be in total agreement), making shopping easier for the customer and promoting more sales. No paper of this sort would be complete without stressing the importance of bringing to the notice of our apprentices the valuable work being done for pharmacy by the National Pharmaceutical Union, the Chemists Federation, and the Proprietary Articles Trade Association.

Discussion

Opening the discussion from the floor, Professor E. Shotton, London, said that he thought Mr. Espley should realise that the undergraduate of the School of Pharmacy, University of London, was an attempt to give a technological background to all aspects of pharmacy and not to one particular aspect. "We have also tried to make the student reason logically for him-self. I think that Mr. Espley is underestimating the material instinct of the present-day student. At the School we try to get the student to spend four to six weeks of their vacation at the end of the first year in a retail or hospital pharmacy to give some realism to the teaching. At the end of the second year we try to arrange for those students to go into industrial pharmacy for a similar period. You would think that the student would be glad of that but we are meeting opposition at the end of the second year when they go

into industry. The reason for that is they have found they can gct about £8 a week in retail whereas in industry they can get only £5 a week." When the student qualified, the reverse appertained. Industrial pharmacy paid more to the post-graduate student than did retail. And he thought that the student would "go for money." Professor Shotton said that the main training in business methods, as Mr. Espley had pointed out, should take place in the retail pharmacy. That was essential if retail pharmacy was to survive as a profession.

Insufficient Time for Training?

MR. H. HUMPHREYS JONES, Liverpool, said that one of the authors had mentioned that the post-graduate trainee regarded the twelve-months' training as a necessary nuisance. It was not a nuisance at all, but he would query whether it was possible to teach the student in twelve months all that was necessary. That was a full-time job, and the retail pharmacist had not the time. It was not the student who should be paid £7 to £9 a week but his supervisor who should be paid that amount. "I say that you cannot deal successfully with the post-graduate trainee in so short a time. I am glad to see that the 'powers-that-be' have come down on my side 50 per cent. in allowing the student to put in a period of training before beginning the three years' course. That is a good oppor-tunity. The weakness is that the trainee might find in that pre-student training that the position is dull and may decide to change. But it is good to have a trainee while he is still at a receptive

Mr. Espley endorsed Mr. Humphreys Jones' suggestion that there should be a twelve-month apprenticeship before the three-year course was undertaken. "I know that the retail pharmacists would support me in that but the educationalists would oppose me, added. The pre-course apprenticeship gave the young person the opportunity to see whether he was going to like the

work.

Parkinson said DR. that Humphreys Jones had raised the financial view of the pharmacist to the postgraduate trainee. Some pharmacists stated simply that they could not afford a trainee. Pharmacists were accus-tomed to ploughing back profits into a business, but teaching the trainee could be regarded as "ploughing back some-thing into the profession." Dr. Parkinson did not agree with the apprenticeship before the academic course except in so far as it enabled the student to leave pharmacy if he did not like it.

MR. T. HESELTINE, Normanton, said that he was delighted to find that the two authors disagreed about the apprenticeship. He wondered if there was an examiner present who would give

his views on that subject.

MR. R. E. LISTER, Edinburgh, suggested that a strong case could be made out for a sandwich course in pharmacy such as was available in engineering. Students who decided to go in for a post-graduate degree on com-pletion of the course were faced with a twelve-months' apprenticeship before they could qualify as a pharmacist. "After completing National Service many of them are against going into retail pharmacy for twelve months at £6 a week." He envisaged a sandwich course of twelve months in industrial and retail pharmacy on completion of two-year academic course. The student would not then feel that he was wasting his time and furthermore, not yet having graduated, he would probably be more receptive.

Sandwich Courses "Difficult"

Referring to Mr. Heseltine's point, Dr. Parkinson said that he could not find at the end of the first year any difference between those students who came straight from school and those who had served an apprenticeship. Referring to the sandwich courses that had been started in engineering since the end of the 1939-45 war, Dr. Parkinson said that his colleagues in the engineering department of Brighton College of Technology had found that the courses were not all that they should be. It was proving difficult to arrange a course with six months spent in industry and six months in college. The scheme was not working out.

DR. HAROLD DAVIS, London, said that as an examiner for twenty-nine years he might be able to answer Mr. Heseltine's question. It was easy to distinguish in one subject — prescription reading — between the candidate who had served an apprenticeship and one who had not. The pre-trained student was by far the better. He could also see the difference in that if the pre-graduate apprentice were confronted with a problem that he did not quite understand he would present a finished product! In other parts of the examination it was not easy to dis-tinguish between the two. "I think it is impossible to come down heavily

in favour of or against because there are pros and cons on both sides. And your students differ so much. One will gain from breaking the sequence between school training and university and on the other hand you have the student who must carry on the whole academic training before going into a

business to serve his apprenticeship."
MR. F. D. P. H. WARD, Northampton, asked what was the responsibility of the post-graduate apprentice to his master? There should be some form There should be some form of certificate at the end of the twelve months showing that the student had made satisfactory progress, as was done in the past with indentures.

DR. PARKINSON approved the idea of

vacational training provided that it was limited to a maximum of one month.

The Society's Responsibility?

"Is not the Society to some extent responsible for the difficulties we are facing?" asked MR. E. CRONIN, Manchester. "They have not had the courage to register premises suitable for the training of students and the Society should be in a position to register apprentice-masters who are suitable."

Replying to Mr. Cronin, MR. J. C. BLOOMFIELD, Portsmouth (a member of the Pharmaceutical Society's Council), said that until recently the Council had control of premises for the training of students. That had been discontinued because the number of premises disallowed had been quite small. Mr. Bloomfield said that Dr. Parkinson, in the last part of his paper, generalised that there were "some premises . . . which leave a good deal to be desired" and added that "it is tempting to suggest that rather than let such a rot spread further it would be as well to take the training out of the hands of take the training out of the hands of

the practising pharmacist." Mr. Bloomfield stated that the right quarter for training the student for pharmacy was in a retail pharmacy only. To condemn the whole for the sins of omission of the few was folly. Mr. Espley's point that the student should be integrated into the Branch system needed stressing. That was the best way to instil into the student a realisation of his professional responsibilities. At Portsmouth there was a student on the Branch committee.

Guidance Groups Idea

MR. N. HERDMAN, Edinburgh, suggested that retail, industrial and administrative pharmacists could form syndicates with one or more college students and in an unofficial and avuncular way guide the students. The idea was practicable in certain areas and in that way a series of such syndicates could be formed.

MR. H. G. Moss, Thames Valley, said that Mr. Espley had referred in his paper to elementary instruction in business methods to be included in the curriculum. It should be emphasised that such instruction should be elementary only. Mr. Moss had initiated, some years ago, a training scheme for junior and female assistants of his staff in a small room at the shop. It was not a success. So Mr. Moss had fitted out a small room as a model shop. Immediately that was successful because the staff were in an atmosphere they were used to. "I am in favour of elementary business methods being taught at college but the real knowledge is gained only in the retail pharmacy itself.

MR. J. W. B. FISH, Dover, asked if statistics were available to show where apprentices were trained. It was his impression that there were more trained



Left: M:. William Low, Durham, makes a quick perusal of the week's events while Mrs. F. D. P. H. Ward, Northampton (centre) seems quite satisfied with the arrangements. Right: Ten-year-old Anne Thomas (daughter of the local committee secretary) hands Mr. J. K. Walker, Thames Valley, his programme upon arrival.

in hospital than in retail pharmacies. Could Mr. Epsley say why so few retail pharmacists were prepared to accept apprentices?

MR. D. STEPHENSON, Dartford, an industrial pharmacist, said that his company's premises had been approved for the teaching of post-graduate apprentices. He had been surprised to find that some of the apprentices had never been inside a retail dispensary, and consequently his company had invited retail pharmacists to speak to the apprentices, and to show them D.D.A. books, poisons registers, and even EC10 forms. He asked if the two speakers approved of that move and whether they thought it might assist colleges if they adopted the same procedure in an eifort to produce pharmacists who understood the whole profession.

Lack of continuity in staff was a reason suggested by Mr. A. Bragg, Liverpool, for the lack of enthusiasm on the part of retail pharmacists to take post-graduate apprentices. Changing staff every twelve months was detrimental to the foundation of a sound professional business. Did Mr. Espley agree?

Referring to Mr. Herdman's suggestion, MR. ESPLEY, said that he commended the scheme of the Stirling Branch of the Pharmaceutical Society under which such an exchange of views was being augmented. Mr. Espley agreed with Mr. Bragg that frequent changes of staff were bad for the retailer and partly explained the diffidence of some pharmacists. While Mr. Espley agreed entirely with Mr. Moss's comments he thought that his scheme was only practicable for the larger business with branches.

DR. PARKINSON disagreed with Mr. Bloomfield's statement that the retail pharmacy was the best place for the pharmacy was the best place for the student to do his post-graduate apprenticeship. He left the choice of practical training to his students and for every two who went to retail six wanted to go into hospital pharmacy. Taking up Mr. Bragg's point, Dr. Parking an engasted that continuity could kinson suggested that continuity could be achieved in another sense: if a business could take students regularly the people who did the training would "get into the swing of it."

"The Real Reason"

The lack of post-graduate apprentices in retail pharmacy was neither due to lack of money entirely nor was it due to apathy, said MR. J. R. PHILLIPS, Bournemouth. The real reason was lack of organisation. Several times he had had a vacancy at his shop and had filled it only to hear shortly afterwards about a student seeking a place to do his post-graduate training. "The Society has a responsibility," said Mr. Phillips, "to keep in touch with students and to let retailers know of students in their area and to put such students in their area and to put such students in touch with the retailers." In that way could the Society's inspectors do something for the good of the future of pharmacy. MR. A. E. Moor, Portsmouth, supported Mr. Phillips' sugges-

MISS M. J. HINCKS, Slough, thought that it would be better for students to follow the academic training with a



Some of the Conference members at the opening session.

period of practical training and after that to sit the final Qualifying examination.

Dr. Parkinson, speaking about the suggested need for organising the placing of students for post-graduate training, said that it was "throwing back the responsibility which the pharmacist should take." He thought Miss Hincks' suggestion unpractical in that it would be difficult to test a student on all aspects of pharmacy that he might have covered.

MR. ESPLEY thought that the dearth of post-graduate students could be remedied by persuading parents to encourage their children at thirteen or fourteen years of age to take the subjects necessary for a pharmaceutical education.

Dr. D. Train, London, thought there had been too much concentration on profession of pharmacy alone. He thought it advisable to watch what other associated professions were doing

in the way of training schemes. "All their students are taking formal education first and are doing their apprentice training afterwards." He believed that the Royal Institute of Chemistry required a student to undertake two years or more post-diploma experience before the student could be admitted to the Institute's register. The same system was followed by the Institute of Chemical Engineers who also required students to go before a committee for approval. "I wonder if we have settled for one year post-graduate training too easily," he added. He suggested that evidence of a student's practical training should be examined by the appropriate subcommittee of the Society's Council before admission to the register was granted.

In closing the session, MR. D. W. HUDSON thanked the authors of the papers and all those present for the way in which they had discussed the

subject.

SOCIAL ACTIVITIES

Civic Reception

Members of the Conference were guests of the urban district council on Monday evening. They were received by MR. NEVILLE (chairman both of the urban district council and of the Conference Local Committee) and Mrs. Neville. A feature of the reception was the presentation of bouquets provided by the urban district council to the ladies of the Conference local chairman, Conference president (Mr. D. W. Hudson) and Conference chairman (Dr. G. E. Foster). Ten-year-old Anne Thomas (daughter of the Conference local secretary) presented the first and third, and six-year-old Miss Hilary Neville the second. The rest of the evening was given over to modern and old-time dancing at the Winter Gardens and Majestic ballrooms, with a shuttle service of coaches between the two.

Ladies' Excursion

Six coaches left Llandudno on Tuesday morning, in fine weather, for the first excursion of the Conference, to the Sychnant Pass. Crossing the sus-pension bridge, built by Telford in 1826, the tourists were interested to see the new bridge nearing completion. The

party stopped for coffee at Conway and then entered the Pass. The old village of Dwygyfylchi attracted much attention, and visitors were delighted with the Fairy Glen.

The second of the day's excursions attracted a bigger crowd and more coaches were needed. The immediate destination was Denbigh, followed by the run through the beautiful Vale of Clwyd, to St. Asaph, the last named being described as the smallest cathedral town in this country. A stop was made at St. Asaph for buffet tea. During the homeward run a short halt was made at Bodelwydden to view the "marble church." The large party was conducted round by the vicar.

Fashion Show

Ladies of the Conference were delighted with the fashion show put on for their benefit on Wednesday morning. It was expertly commèred and modelled with the emphasis on autumn and winter ensembles. Many were the congratulations passed to the local committee and to Messrs. Marie et Cie., for providing so pleasing a diversion from the more serious work of the Conference.

BRITISH PHARMACEUTICAL CONFERENCE, LLANDUDNO, 1958

SCIENCE SESSIONS

A total programme of twenty-eight papers

THE first of the science sessions was opened promptly at 2.30 p.m. on Monday afternoon by Dr. G. E. Foster, the Conference chairman. After he had outlined the procedure that would be followed in dealing with the discussion, he called on Mr. Sykes to read the first paper. In the reports that follow, the papers are only briefly summarised and the titles themselves have been condensed.

"Sufficient of a Suitable Bacteriostatic"

G. SYKES

THE paper discusses the British Pharmacopæia requirement that all injection solutions in multiple-dose containers shall contain "sufficient of a suitable bacteriostatic to prevent the growth of micro-organisms." The prime reason for including bacteriostatic substances in parenteral preparations dispensed in multiple-dose containers is to ensure that contaminating organisms, intro-duced accidentally whilst withdrawing successive doses, shall not proliferate and so cause subsequent damage to the medicament or give rise to infection in the patient. The British Pharmacopæia examples (phenol, 0.5 per cent., w/v; cresol, 0.3 per cent., w/v; chlorbutol, 0.5 per cent., w/v; chlorcresol, 0.1 per cent., w/v; and phenylmercuric nitrate, 0.001 per cent., w/v) vary in antimicrobial properties, and loss is possible by absorption into the rubber closure. The chosen substances must be compatible with the medicament. The basic requirements are ability to prevent the growth of, and preferably to kill, contaminating micro-organisms; compati-bility with the medicament, even on long storage; low absorption rate into rubber; and absence of toxicity to the patient in the quantities employed. In the paper the first and third considerations are discussed. Although the five bacteriostats recommended in the B.P. have proved satisfactory for most purposes, they have their limitations and disadvantages. All except phenol are readily absorbed into rubber. There is room for other suitable substances, but as yet no approved method for assessing their practical value. The criteria outlined in the paper are put forward as a basis for discussion.

(From the microbiology division, standards department, Boots Pure Drug Co., Ltd., Nottingham)

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Discussion

THE CHAIRMAN, opening the discussion, said the British Pharmacopæia stipulated that medicaments dispensed in multi-dose containers should contain sufficient of a suitable bacteriostatic to prevent the growth of micro-organisms, but gave no other criterion. Mr. Sykes had raised questions which would give some further guidance to the pharmacist as to what constituted a suitable bacteriostatic.

Mr. G. H. Wright, Leeds, asked whether any research had been done on polythene or plastic closures.

MR. SYKES said the absorption of different bacteriostats varied with the type of plastic used. With some it was

higher than with rubber.

DR. A. M. Cook, London, agreed that any test of that type should include fungal spores. A new description was required. A bacteriostat did not necessarily mean a substance which inhibited fungal spores. Had Mr. Sykes any detailed information regarding the types of contaminant found in injections? Would he base his test of a bacteriostatic on its action against a typical resistant strain, or on a spectrum test against a number of organisms? Would he advise that the test should be done in the presence of a suitable closure, and of some of the solutions actually used for injections?

MR. SYKES said there was no such thing as a specifically resistant strain. In his tests he had chosen primarily staphylococci and pyocyaneous organisms. It was necessary to use a spectrum test. The contaminant most commonly encountered in the injections under discussion were staphylococci and pyocyaneous organisms. Collections of strains of such organisms, preferably of recent origin, were the organisms of choice.

DR. F. HARTLEY, London, said the pharmacist must be satisfied that there was no danger of mould contamination. The chosen microbial agents inhibited mould spore at a concentration much below that necessary to kill them. To insist that the bacteriostat must be lethal to mould spores as well as to bacterial spores was going beyond what was necessary. If the bacteriostat was required also to kill mould spores, fungistatic agents should be added to the range under examination.

MR. SYKES said he thought it a not unreasonable objective to find one single substance that was lethal to bacterial and mould spores. There were no specific tests for moulds in the British Pharmacopæia but there were such in the United States Pharmacopæia. Under aseptic conditions in a sterile room, moulds were as likely contaminants as bacteria.

MR. K. HOLLAND, Romford, said the difficulties attending the use of multi-dose containers were well illustrated by the paper. An attempt should be made to prohibit the use of such containers so far as possible in favour of ampoules, which were the ideal sterile container for injections.

MR. SYKES said that, from the bacteriologist's point of view, the multi-dose container should be condemned.

MR. W. T. WING, Newcastle, said Mr. Sykes' figures had shown the lethal and inhibitory properties of cetrimide to be high. The partition ratio of cetrimide between rubber and water was high, but cetrimide was virtually non-volatile. Had Mr. Sykes examined solu-

tions of cetrimide for mobility in containers closed with rubber closures? Did the high partition ratio between cetrimide and water arise when rubbers of different composition were used?

MR. SYKES said some results using cetrimide had been published in a similar paper read at the Conference meeting in 1957. Cetrimide was tolerably stable in solutions dispensed in multidose containers. The high partition ratio had persisted when rubbers of different composition were used. The chief trouble with cetrimide was its ready inactivation by traces of organic matter.

matter.

DR. K. R. CAPPER, London, asked what media had been used in the tests for the lethal properties of a bacteristat? The use in the B.P.C. of the adjective bacteriostatic rather than the noun bacteriostat had been questioned. If the word bacteriostatic had been used, it was because clarity was preferred to pedantry.

The next paper, which was read by Mr. G. R. Wilkinson, was on:—

Low-pressure Steam Sterilisation

I. DESIGN AND INSTRUMENTATION T. E. BARSON, F. PEACOCK, E. L. ROBINS

and G. R. WILKINSON

Moist heat derived from steam under pressure is still considered to be the most satisfactory method of obtaining sterility. An exposure of at least twenty minutes to saturated steam at 121° C. (250° F.) is required. The authors have designed a vessel for the study of the factors influencing sterilisation by steam at low-pressure, and have constructed instruments for converting pressure and the volume of condensate into electrical signals suitable for application to a recording potentiometer. They have tested commercially available steam traps, compared them, found them unsuitable, and produced a modified steam traps.

II. INFLUENCE OF WATER CONTENT ON EQUILIBRIUM TIME

that is considered more efficient for its

purpose than those formerly used.

In this part of the paper the authors examine variations in the times taken by surgeons' gowns to reach steam temperatures within a steam steriliser with air elimination by downward displacement and evacuation. Using surgeons' gowns equilibriated with normal atmospheric conditions—about 60 to 70 per cent. relative humidity—the times taken for the gowns to attain steam temperatures varied, whichever method of air removal was employed. Gowns dried at 50° rapidly attained steam temperature and then superheated to a considerable degree, the superheat being maintained for long periods. The authors remark that their work has raised a number of contentious points requiring further work. Not before

that is done can tests be designed using bacterial spores to ascertain whether ideal theoretical conditions do in fact bring about sterility.

(From the research division of Allen & Hanburys, Ltd., Ware, Herts)

Discussion

DR. FOSTER, in opening the discussion, said it was not customary as a routine to test the sterility of items emerging from an autoclave, but the paper had raised points that called in question fundamental basis of design.

MR. D. W. HUDSON, Hove, thought the information in the paper might be of interest to the designer of sterilising apparatus, but one important point had been overlooked: its practical value to the user of the autoclave. It had been demonstrated, and was not new, that a factor in the sterilisation of gowns (and of dressings and masks) was their degree of hydration or dehydration. Hence the commonly adopted procedure of ironing gowns and masks immediately before sterilising them. Would it not be of value to consider the effects of time and temperature in parallel with the effect on the fabric of prolonged steaming. Designers must avoid producing apparatus that destroyed while sterilising. The reply was that it was established that, for proper sterilisation of dry dressings they must be in saturated steam. But in practice it had been found that in apparently dry dressings "pockets" of super-heating took place. He agreed that a balance must be drawn so that time spent on sterilising was not time spent in destruction of fabric, but that was

the point of the investigation.

MR. R. MAXWELL SAVAGE, Barnet, offered one or two suggestions to the authors in their continued investigations. It was a fact that paper-wrapped articles sterilised more readily than unwrapped, and he had not heard that manufacturers of dressings, for example, had encountered any special difficulties in ensuring the sterility of their products. He did not agree that there was no literature on the efficiency of steam traps in sterilisers, citing work done in Berlin in 1954 and "a steady stream" since. He agreed, however, that traps could be a menace and asked whether any elaborate trap was really necessary. On the question of superheating he asked the authors to bear in mind that, in the presence of fibre, water had, in effect, a higher boiling water had, in effect, a higher boiling did not point, so that superheating did not begin at 100°. Mr. WILKINSON replied that the issue drum v. fabric was very much in the minds of his colleagues and himself. It had to be borne in mind that drums were more "handleable." Paper wrappings, he agreed, able." Paper wrappings, he agreed, were effective if entire, but in the paper they were trying to look into practical aspects rather than theoretical ideals. His reference to the shortage of literature on steam traps had been specific to the question of their application to the matters dealt with in the paper.

MR. G. SYKES, Nottingham, said that a high proportion—he thought 95 per cent.—of sterilisers had been condemned by one writer not so much on their design but on their mishandling. He thought that the authors' findings

should be brought to the notice of the Medical Research Council committee at present dealing with the subject. He pointed out to Mr. Hudson that, at 30 lb. per sq. in., a time of two minutes was adequate for steam sterilisation. Evacuation had been found a satisfactory procedure provided the residual pressure was down to not more than 20 mm. He had been informed that a proprietary steam trap which he named had proved satisfactory. Would Mr. Wilkinson agree?—The reply was that the authors of the paper were suggesting a modified form of that steam valve.

MR. W. T. WING, Newcastle, asked if the method of evacuation by pumps had been considered? It cnabled an almost complete evacuation of air.—The reply was that the removal of air was one of the points of contention. It might be good, but how to do it was the difficulty. A prototype steriliser, with pump, was under consideration.

MR. T. D. WHITTET, as a hospital

MR. T. D. WHITTET, as a hospital pharmacist, pointed out that the sterilisation of dressings was in general not under the pharmacist, and he hoped that the lesson of the paper should be learned. He recommended the use of recording apparatus as a time and temperature safeguard. He mentioned that in Sweden a nylon film wrapper, with sealing tape, was being used with some success.—MR. WILKINSON agreed about the importance of time and temperature, but how was one to ascertain what was happening? He did not consider adequate a thermometer placed at the top of the autoclave, or in the drain?

The next paper, read by Mr. Johnson, was concerned with:—

Colorimetric Determination of Morphine

C. A. JOHNSON and CECILIA J. LLOYD METHODS by which morphine may be determined colorimetrically are discussed, and the present method criticised. A reaction described by Pride and Stern, which depends upon the oxidation of morphine with iodic acid followed by treatment with ammonium bicarbonate and nickel chloride to give a green colour, has been found satisfactory. Improved extraction procedure for the separation of morphine from extraneous material in a number of galenical preparations is

suggested, and application of the colorimetric reaction to morphine residue so obtained is described. (From the analytical development group, standards department, Boots Pure Drug Co., Ltd., Nottingham)

Discussion

THE CHAIRMAN asked whether the better method described for the separation of the morphine had played a significant part in the achievement of more satisfactory results.

more satisfactory results.

MR. S. G. E. STEVENS, London, asked how the authors had arrived at the figures given under "calculated" in the tables.

MR. JOHNSON said that all the samples used had been prepared on a laboratory scale, using a previously standardised tincture of opium as a starting point, so that analytical conditions had been used for their synthesis. The authors had applied the nitrosomorphine reaction to solutions prepared in that way and had found the suggested method of analysis an improvement.

DR. A. H. BECKETT, London, asked whether the method could be applied to the detection of morphine in biological fluids. Would it be possible to distinguish between morphine and normorphine under those conditions?

MR. JOHNSON replied that Pride and

MR. JOHNSON replied that Pride and Stern had shown that normorphine gave a colour—not as much as morphine, but if they occurred together that could cause interference with the method.

MR. F. H. SUMMERS, London, asked how the figures given in the table for the British Pharmacopæia method were calculated. How many assays were done by that method and what was the range?

MR. Johnson's reply was that the comparison with figures obtained by the British Pharmacopæia method was also based on previous experience.

DR. R. E. STUCKEY, London, said

DR. R. E. STUCKEY, London, said the results obtained from the extraction of pastilles were usually not good. Had the authors found that the British Pharmacopæia Codex method of extraction recovered the full amount?

MR. JOHNSON said that they had had to use a production batch of pastilles so that the results could not be accurately assessed. The figures had only been included to show the difference between the two methods. That of Pride and Stern gave a somewhat lower result than the official one.



A view of those attending a science session.

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the non-fattening sweetener

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TRADE REPORT

The prices given are those obtained by importers or manufacturers for bulk quantities or original packages. Various charges have to be added whereby values are in many instances augmented before wholesale dealers receive the goods into stock. Crude drugs and essential oils vary greatly in quality and higher prices are charged for selected qualities.

LONDON, SEPTEMBER 17.—The markets have still not recovered from the holiday season and inquiry in all sections during the past week has been confined to small replacement lots.

Among CRUDE DRUGS holders of French GENTIAN were prepared to shade their prices slightly, the quotation being 170s. per cwt., against 175s. re-Some Russian Liquorice was cently received in London recently but it was immediately sold and at present only Persian is being offered on the spot. LOBELIA HERB was threepence per 1b. lower for immediate delivery although the shipment price was unchanged. Some Italian white SQUILL which has been absent from the market for several weeks is now offered at 80s. per lb., ex wharf. Among AROMATIC SEEDS, CELERY was unchanged, CUMIN remained firm while FENUGREEK was in poor demand. Dutch Caraway was slightly firmer. Zanzibar CLOVES for shipment were slightly cheaper but spot material was unaltered. There were limited supplies of Matto Grosso IPECACUANHA offered on the spot but root from other sources was unobtainable except for forward shipment.

The Minister of Agriculture in Greece has reported that on present estimates OLIVE OIL production this year is likely to amount to 125,000 tons, compared with 163,000 tons in 1957. Olive oil exports from the 1957 crop have so far amounted to around 10,000 tons, present stocks totalling 35,000 tons.

Pharmaceutical Chemicals

Aneurine hydrochloride.—1-kilo quoted at £13 7s. 6d. and 10-kilo lots at £13 per kilo.

Antimony salts.—Quotations for pot-assium tartrate b.p., are 7s. 6d. per lb. for 1–10 cwt. and sodium tartrate, b.p., 12s. 6d.

ASCORBIC ACID. — Rate per kilo: 1 kilo, £4 18s.; 10 kilos, £4 16s. Sodium ascorbate is offered at the same prices.

ASPIRIN.—5-cwt. lots are 4s. 9d. per 1b.; 1-cwt., 4s. 11d. The Calcium salt is 12s. 6d. per lb.

BENZAMINE. — 16-oz. lots lactate is 15s. 3d. per oz. and hydrochloride, 16s. 3d. per oz.

CALCIFEROL.—B.P. is 3s.-2d. per gm. for 1-kilc lots.

LONDON EXCHANGE RATES

At the opening on Wednesday

Alexandria. Piastres to £ Amsterdam Florins to £ Bombay Shillings to 974-971 10·56-10·72 1/5 \$\frac{1}{2} - 1/6 \frac{1}{2}\$
138.95 - 141.05
19.19\frac{1}{2} - 19.48\frac{1}{2}\$
11.67 \frac{1}{3} - 11.84 \frac{1}{4}\$
1/2 \frac{1}{4} - 1/2 \frac{1}{2}\$ rupee Francs to £ Brussels Francs to £
Copenhagen Kronor to £
Frankfurt D Marks to £
*Hong Kong Shillings to \$
*Karachi Shillings to rupee
Lisbon Escudos to £
*Montreal Dollars to £
New York Dollars to £
Oslo Kronor to £
*Paris Francs to £
Stockholm Kronor to £
*Singapore Shillings to \$
Zurich Francs to £
*Free market rates; remainder 1/5 1/3 - 1/6 1/4 79:90-81:10 2·74 1/6 - 2·74 1/8 2·78-2·82 19:85-20:15 1,167:18-1,184:82 14:37 1/3 - 14:59 1/4 2/3 1/3 - 2/4 12:15 1/6 - 12:33 1/4 12:15 1/6 - 12:33 1/4

Free market rates; remainder Bank of England Bank rate: 5 per cent.

CALCIUM PANTOTHENATE.—Price per kilo is £11 12s. 6d.

CARBROMAL.—B.P.C. is 21s. per lb. delivered in returnable packing.

CHLORAL HYDRATE. — In 1-cwt. lots the price is about 4s. 3d. per lb.

CHLORBUTOL.—28-lb. lots are quoted at

CHLOROCRESOL.—Pharmaceutical quality is quoted at 7s. 2d. per lb. for 1-cwt. lots.

CREAM OF TARTAR.—Rates for the home trade are now as follows:—1-ton lots, 231s. per cwt.; 10-cwt., 232s.; 5-9-cwt., 233s.; 2-4-cwt., 234s.; 1-cwt., 235s.

CREOSOTE.—B.P. quality, ex beechwood, is from 6s. 9d. to 7s. 6d. per lb.

Cyanocobalamin. — 10-gm. £63 7s. 6d. per gm., and 1 gm. £65.

DEXTROSE. — Rates are as follows: DEXTROSE. — Rates are as follows:—MONOHYDRATE, B.P., 1-lb., 1s. 11½d.; 7-lb., 1s. 10d.; 28-lb., 43s.; free packages, less 12½ per cent. to wholesalers. In bulk, 1-ton lots, £90 ex works. ANHYDROUS, B.P., 7-lb., 14s.; 14-lb., 26s. 3d.; 28-lb., 49s. (terms as for monohydrate). 1-ton lots, £107 10s. ex warehouse.

FOLIC ACID.—B.P. and U.S.P. are offered on the spot at 2s. 5d. per gm. for 1-kilo lots.

MENAPHTHONE.—B.P. is £11 per kilo; ACETOMENAPHTHONE, B.P., £11; WATER-SOL-UBLE (menadione sodium bisulphite, U.S.P.), £15 per kilo.

NICOTINAMIDE. — Prices per kilo are ow: 1 kilo, 90s.; 10 kilos, 87s. 6d.; 50 kilos, 85s.

NICOTINIC ACID. — Prices oer kilo are 55s. for 1-kilo and 50s. for 50-kilo lots.

Nikethamide. — Prices per kilo are:—1 kilo, 110s.; 50 kilos, 100s.

PIPERAZINE. — ADIPATE is from 32s. 6d. to 36s. 6d. per kilo; citrate from 32s. 6d. to 36s. 6d.; HEXAHYDRATE, 19s. 6d. and TARTRATE, 38s. 6d.

Pyridoxine. — Manufacturers' rate for 1 kilo is now £86 per kilo; 10 kilos, £84.

QUINIDINE.—Prices are as follows:—

Home Trade		500 oz. or more	100-400 oz.
		per oz.	per oz.
QUINIDINE		s. d.	s. d.
ALKALOID		7 111	8 11/2
GLUCONATE		9 41	9 61
HYDROBROMIDE		6 7	6 9
HYDROCHLORIDE	1	6 9	6 11
SULPHATE		6 0	6 2
Hydroquinidine			
HYDROCHLORIDE		11 2	11 4
GLUCONATE		8 61	8 81/2

For export quinidine alkaloid ranges from £12 12s. 3d. to £12 17s. 4d. per kilo and sulphate from £9 10s. 5d. to £9 15s. 6d.

RIBOFLAVINE. — Price (per kilo) is £17 for 1-kilo and £16 12s. 6d. for 10-kilo lots.

Salicylamide.—Price per lb. for 1-cwt. lots is 8s. 6d.

SEMICARBAZIDE HYDROCHLORIDE.—Technical grade is 19s. per lb. for 1-cwt. lots.

Sulphur.—B.P. precipitate in 1-ton lots

is £112 10s. per ton, delivered U.K.

SODIUM PERBORATE. — Prices (per cwt.) are 145s. 9d. in 1-cwt. kegs; 138s. 3d. in 1-cwt. bags for B.P.C. (minimum 10 per cent. available oxygen). The PERBORATE MONOHYDRATE testing 15 per cent. available oxygen is 309s. 9d. per cwt.

TANNIC ACID.—The B.P. levis, ex ether is quoted at 10s. per lb. for 1-cwt. lots. The B.P. powder is 9s. 6d. per lb. in 1-cwt. lots.

TEREBENE. — For 1-carboy lots, 4s. 2d. per lb. is asked. 1n winchesters, prices are 15s. 9d. per lb.; 28-lb., 14s. 6d.

VITAMIN A. — Synthetic. Supplied in strengths of 200,000 international units per gm. the price is 11¼d. per million i.u. Natural is 1s. 4d. per million units.

VITAMIN D_2 . — In oil, 2 million units per gm. the price is 2d. per million international units. Crystalline: see under calciferol.

VITAMIN E (synthetic). — TOCOPHERYL ACETATE, B.P.C., 10 gm. to 100 gm., 1s. 2d. per gm.; 100 gm. to 1 kilo, 1s. per gm.; 1 kilo and under 10 kilos, £45 per kilo; 10 kilos, £44 15s. per kilo.

Industrial Chemicals

ACETALDEHYDE. — The 100 per cent, is $\pounds 155$ per ton.

ACETATES.—Prices (per cwt.) for drum lots are as follows:—AMYL (technical), 255s., and B.S.S., 257s. BUTYL, 179s.; ETHYL, 151s.; ISOPROPYL, 147s.

ACETIC ANHYDRIDE. — 10-ton lots are quoted at £134 per ton, delivered U.K. in returnable drums; 1-ton lots, £136.

ACETONE. — One-ton lots are quoted at £90 per ton.

BENZOLE. — Thiophene-free is from 9s. $3\frac{1}{2}$ d. per gall. for one 50-gall. barrel and pure, 6s. $3\frac{1}{2}$ d. per gall. for similar

N-BUTYL ALCOHOL.—1-ton to 5-ton lots are quoted at £159 per ton and one-drum lots at £163 per ton. Secondary is £130.

CARBON TETRACHLORIDE, B.P.—1–2-carboy lots are £135 per ton. TECHNICAL, in 40-gall. drums, in less than 1-ton lots, is £84; 1 ton and under 2 tons, £81; 2 tons and under 4 tons £80 10s.; 4 tons and upwards, £79 10s.

ISOPROPYL ALCOHOL. — Technical grade (99 per cent.) 5s. $0\frac{1}{2}$ d. per gall. for 10,000gall. lots; anhydrous in drum lots is £108 per ton.

METHYL ETHYL KETONE.—One-ton lots in drums are quoted at £145 per ton.

METHYL ISOBUTYL KETONE. — One-ton lots (in one delivery) are now £165 per

Naphthalene.—Home market prices (per NAPHTHALENE.—Home market prices (per ton for 4-ton lots at one time) are as follows:— CRUDE, crystallising point 64-71.9° C., £22 5s. to £23; WHIZZED, c.p. 72-77.5° C., £27 3s. 6d. to £35 13s. 6d. according to the crystallising point, ex works; HOT-PRESSED, minimum c.p. 77.6° C., £42 10s. 6d. ex maker's works; CRYSTALS from £62 8s. 6d. to £64 18s. 6d., delivered; BALL AND FLAKE, £70 18s. 6d. to £73 9s. delivered.

Phthalates.—Prices (per ton) for drum lots are as follows:—Dibutyl, £216; Disobutyl, £202; Diethyl, £193 10s.; Di-METHYL, £185.

STEARATES. — Spot prices for minimum 1-ton lots are now as follows:—Aluminum (all grades), 258s. 6d. per cwt., CALCIUM (precipitated), 248s. 6d.; LEAD (30 per cent.), 228s. 6d.; MAGNESIUM (standard), 261s. and (superfine), 307s.; ZINC, 261s. to 291s. as to grade.

SULPHACETAMIDE. — Quotations (per lb.) for 1-cwt. lots are 24s. 6d. The SODIUM derivative is 30s.

TITANIUM DIOXIDE.—In 5-ton spot lots anatase is from £162 5s. per ton; rutile is £178 5s. for surface-coated and £170 for non-surface-coated.

Crude Drugs

ACONITE. — Spot supplies of Spanish napellus are 2s. 6d. per lb.

AGAR.—Kobe is 11s. per lb., duty paid.

New crop for shipment, 9s., c.i.f.

ALOES. — Cape prime on the spot is 240s. per cwt. and for shipment, 210s., c.i.f.

Anise (STAR).—Chinese is 130s. per cwt. c.i.f. and 140s. spot in bond.

BALSAMS. — Quotations per lb. are:—CANADA: Spot, 25s. COPAIBA: Para from 8s. to 10s., duty paid. PERU: Spot, 11s. TOLU (genuine as imported): 24s.; B.P.,

BELLADONNA.—Herb is 2s. 6d. per lb. on the spot. Root is 1s. 6d. spot; shipment, 1s. 3d., c.i.f.

Benzoin.—Sumatra No. 1 block on the spot is 520s. to 540s. per cwt. (475s., c.i.f.).

BUCHU.—Spot rounds are 6s. 3d. per lb. and shipment, 5s. 9d., c.i.f.

CALAMUS.—Root is quoted at 1s. 4d. per lb., c.i.f.

Cardamoms. — Aleppy greens are 15s. per lb. on the spot; September-October shipment, 13s. 3d., c.i.f. No. 1 seed for shipment, 19s. 9d., c.i.f., spot, 24s. 3d.

Cassia.—Selected whole bark for shipment is 220s, per cwt., c.i.f., and extraselected broken, 210s., c.i.f. Spot: Whole 235s. in bond nominal. *C. fistula*, 110s.

CHILLIES. — Spot Mombasa are 185s. per cwt. and Zanzibar, 225s.

CINNAMON.—Ceylon for shipment (c.i.f.) per lb., OOOO, 7s. $3\frac{1}{2}d$.; OOO, 6s. $11\frac{1}{2}d$.; OO, 6s. $9\frac{3}{4}d$.; seconds, 5s. $4\frac{3}{4}d$.; featherings, 1s. 10d.; quillings, 4s. 4d.; chips, 1s.

CLOVES. — Zanzibar on the spot are 3s, $2\frac{1}{4}d$. per lb.; shipment sold at 2s, $8\frac{1}{2}d$.,

COCHINEAL.—Silver-grey Peruvian quoted 6s. 6d. per ib., c.i.f.; Canary Isles black-brilliant, 20s. 6d., spot.

DIGITALIS LEAF.—Purpurea (1956 crop) is offered at 1s. $2\frac{1}{2}$ d. per lb., c.i.f.; 1957 crop, 2s. 6d. to 2s 7d., c.i.f.

ERGOT.—Portuguese is 5s. per 1b., c.i.f., for prompt shipment and 6s. spot nominal; American, 5s. 9d., spot.

GENTIAN.—French is 170s. per cwt. on the spot.

GINGER.—African, 102s. 6d. per cwt. on the spot.; new crop for shipment, 92s. 6d., c.i.f. Jamaican No. 3 on the spot is 280s. per cwt.

GUM ACACIA. — Kordofan cleaned sorts are 140s. per cwt. on the spot; September-October shipment, 128s. 6d., c.i.f.

1PECACUANHA. — Matto Grosso, 55s. per lb., spot, limited supplies; shipment, 53s., c.i.f. Colombian quoted at 55s., c.i.f.; Costa Rican, 64s., c.i.f.

KARAYA. — No. 1 gum on the spot is quoted at 235s. per cwt. and No. 2 at

Kola Nuis. — Jamaican are offered at about 8d. per lb. spot, and 7d., c. f. African 5d. to $5\frac{1}{4}$ d. spot and 4d., c.i.f.

LANOLIN. — ANHYDROUS, B.P., is from 170s, to 175s, per cwt. in 1-ton lots and HYDROUS, B.P., 150s., free drums, delivered.

LIQUORICE.—Natural root: Persian on the spot is 47s. 6d.; for shipment, 42s. 6d., c.i.f., per cwt. Block juice: Anatolian, 200s. to 210s. per cwt., as to quantity. Italian stick from 310s. to 476s. per cwt. Spray-dried extract, 2s. 10½d. per lb.

LOBELIA HERB. — Spot offers are from 3s. 6d. per lb. as to origin. Dutch, 3s. 3d., c.i.f. for shipment.

c.i.f. for shipment.

MENTHOL.—Chinese is 52s. per lb., duty paid and 47s. 6d., c.i.f.; Brazilian, spot, 35s. 6d., duty paid, shipment, 33s., c.i f. Formosan for shipment, 36s., c.i.f.

MERCURY. — Price per flask (76 lb.) is

£79 on the spot.

Orange peel. — West Indian bitter quarters are 11d. per lb.; Spanish, 1s. 3d. to 1s. 6d., as to quality; thin-cut Tripoli,

ORRIS ROOT. — Florentine is 330s. per cwt. Short at origin.

Podophyllum.—Emodi: Spot not quoted; new crop awaited. Peltatum, on the spot, 4s. 3d. per lb.; shipment, 450s., c.i.f.

Pyrethrum.—Extract, minimum 25 per cent. w/w pyrethrins, is 72s. per lb.

QUASSIA.—Chips on spot are offered at 55s, per cwt., no shipment offers.

QUILLAIA.—Spot offers of whole bark at 165s. per cwt.; cut, 197s. 6d.; crushed, 190s. Whole for shipment, 115s., c.i.f.

RIHUBARB. — Chinese small to medium offering from 6s. to 7s. 6d. per lb., as to quality. Best grades not available on spot.

Sarsaparilla.—Jamaican native red on e spot is 2s. 6d. per lb. Shipment, not offering.

offering.

SEEDS. — (Per cwt.). ANISE.—Spanish, 165s., duty paid. CARAWAY.—Dutch firmer at 87s. 6d., duty paid. CELERY.—Indian unchanged at 180s., spot, and 140s., c.i.f., for prompt shipment. CORIANDER.—Steady. Spot, Moroccan at 60s. and Polish, 52s. 6d., both duty paid. Moroccan for shipment, 44s. 6d., c.i.f. CUMIN.—Cyprian, 235s. to 240s., spot. Shipment: Cyprian, 212s. 6d.; Iranian, 195s., c.i.f. DILL.—Indian, 70s., spot; shipment, 60s., c.i.f. FENNEL.—Indian, 175s.; Chinese, 157s. 6d., duty paid. FENUGREEK.—Moroccan, 46s., spot, duty paid. MUSTARD. — English, medium quality quoted at 75s.

SENEGA.—Spot is 14s. per lb.; shipment

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SENNA. — Tinnevelly LEAVES, prime No. 1, 1s. 5d. per lb., f.a.q., No. 3, 10d. Pods, manufacturing short at 1s. 6d. and hand-picked, 2s. 1d. to 2s. 4d. Alexandria pods: Manufacturing, offered from 1s. 6d. with hand-picked from 5s. to 6s.

SHELLAC.—F.O.T.N. 180s. per cwt., F.O. No. 1, 205s.; fine orange, 220s. to 275s.

SQUILL.—White is quoted at 80s, per cwt. on the spot.

STROPHANTHUS—Kombé on the spot is 8s. per lb. for the 100 per cent. Gratus is unobtainable on the spot.

Tonquin Beans.—Para on the spot are offered at 8s. 3d. per lb. Shipment, 7s. 6d., c.i.f.

TRAGACANTII.—No. 1 ribbon is £1 £120 per cwt., No. 2, £105 to £110.

TURMERIC.—Madras finger is 62s. 6d. on the spot; shipment, 60s., c.i.f.

VALERIAN ROOT. — Spot: Indian (with rootlets) is 130s. and Belgian, 175s. to 195s. per cwt. Dutch (max. 2½ per cent. sand) for prompt shipment, 168s., c.i.f.

Vanillin.—Rates (per lb.) are now: 5-cwt. lots, 25s. 3d.; 1-cwt. 25s. 6c56-lb., 25s. 9d.; smaller quantities, 26s.

WAXES, — (Per cwt.). BEES'.—Dar-es-Salaam, spot, 525s., shipment, 475s., c.i.f. Abyssinian, spot, 470s. in bond; shipment, 445s., c.i.f. Benguela spot, 520s., duty paid; shipment, 465s., c.i.f. Candelilla.—Spot, 460s. Carnauba.—Fatty grey, spot, 570s.; for shipment, 565s., c.i.f. Prime yellow, spot, 1,000s.; shipment. 950s., c.i.f.

Essential and Expressed Oils

Almond. — British oil is 9s. per lb. Moroccan, 6s. 9d., in bond.

ANISE.—Chinese, 8s. per lb., spot; shipment, 7s. 6d., c.i.f.

BERGAMOT. — Spot supplies are from 86s. 6d. per lb.

BIRCH TAR.—Rectified is about 14s. per lb. in 1-cwt. lots.

CASTOR. — Home-produced B.P. oil the spot is £143 per ton naked ex mill (2-

CAMPHOR, WHITE.—Chinese is 1s. 10½d. per lb., in bond.

CARAWAY.—English-distilled is offered at 55s. and imported 26s. 6d. per lb.

CINNAMON.—From quillings, best lish-distilled is 50s. per oz.; other B.P. oils from 165s. per lb. Ceylon leaf, spot, 11s. 6d. per lb.; shipment, 10s. 10½d., c.i.f., rectified, 15s. per lb.; Seychelles, 6s., spot, shipment, 5s. 7½d.

CITRONELLA.—Ceylon, spot is 4s.; shipment, 3s. 5½d., c.i.f. Formosan, prompt shipment, 3s. 8½d. (spot nominally 4s. in

CLOVE. — Madagascar leaf, 6s. 9d. per lb., duty paid nominal; shipment, 6s. 4d., c.i.f. Rectified 87-88 per cent., 9s. 3d. Distilled bud oil, English, B.P., 26s. 6d. to 27s. 6d.

DILL.—B.P. imported is 25s. per 1b.

EUCALYPTUS.—Australian 70 to 75 per cent. eucalyptol on the spot is 4s. 9d. per lb. 80-85 per cent., 5s. 6d. Spanish (70-75), 4s. spot.

JUNIPER. — B.P.C. 1949 oil is from 9s. per lb. on the spot. English-distilled is 155s. JUNIPER WOOD, from 5s.

NUTMEG. — Imported B.P. oil is about 92s. 6d. per lb. English-distilled, 142s. 6d. as to quantity.

ORANGE.—Spot quotations of sweet oil include Floridan at 12s. 6d. per lb.; Californian, 15s.; West Indian, 12s.; West African, 24s. 6d.; Israeli, 16s. 6d. For prompt shipment, Californian cold-pressed, U.S.P., 16s. 9½d., c.i.f.; distilled, 6s. 5d., c.i.f. Terpeneless is 200s, per lb., spot; bitter around 27s. as to sample.

PATCHOULI. — Penang is 27s. 6d., duty paid and 22s. 6d., c.i.f. per lb. Seychelles is quoted at 31s. spot.

PEPPERMINT. — Arvensis: Chinese is 24s. 9d. per lb. on the spot nominal and 22s. 6d., c.i.f. Brazilian, 8s. 3d., spot and 7s. 9d., c.i.f. Formosan, 15s. 3d., spot; new-crop for September shipment, 12s. 6d., c.i.f. Piperita: Italian "Mitcham"-type, from 42s. 6d. to 50s.; American, 27s. 6d. to 30s., as to origin.

PETITGRAIN. — Paraguay is offered at 18s. per lb. on the spot; 16s. 9d., c.i.f.

PIMENTO. — English-distilled berry is 180s. per lb.; imported, 77s. 6d. Rectified leaf, 27s. 6d. per lb. for small lots.

PINE.—Punilionis on the spot is 16s. per lb.; sylvestris, 25s.; Siberian (abietis),

ROSEMARY. — Spanish is 9s. per lb. on the spot for best quality.

Rue.—Spanish is 25s. per 1b. on the

SAGE.—Spanish is 9s. per 1b.; Dalmatian, 37s. 6d.

Sandalwood. — Mysore offered from 77s. 6d. to 80s. per lb. as to source. East Indian 82s. 6d., spot.

- Brazilian is from 3s. 6d. SASSAFRAS. per lb., duty paid.

SPEARMINT.—Offers of U.S.P. grade are from 29s. per lb. on the spot.

Tangerine. — Hand-pressed is 55s. per lb. and machine-pressed, 42s. 6d., spot.

VETIVERT.—Spot is currently at about 87s. 6d. per 1b.

YLANG YLANG.—Spot is from 32s. 6d. to 46s. per lb as to grade.

UNITED STATES REPORT

NEW YORK, SEPTEMBER 16: Duties on imported CREAM OF TARTAR and TAR-TARIC ACID of $3\frac{1}{8}$ cents and 6 cents per lb. respectively are currently being investigated by the Tariff Commission on an application for increases in duty and an import quota system. Among Essen-TIAL OILS West Indian SANDALWOOD was up 5 cents per lb. to \$1.15 in drums.

WORLD TRADE

U.S. Boric Acid Production. — The United States Borax and Chemical Corporation is to increase boric acid production by 25–30 per cent, by January 1959, in order to meet increased demand from industry and particularly to supply growing requirements of boron fuel manufacturers, the company announced.

New Zealand-Japan Trade Pact.— New Zealand on September 9 signed with Japan a trade agreement that accords each country full "most favoured-nation treatment" in customs duties, import licensing, and the control and allocation of foreign exchange. Import licences issued to New Zealand importers on other non-scheduled countries (countries outside the dollar area) may be used for imports from Japan.

Anglo-Dutch Trade Council.—The Federation of British Industries with the Association of British Chambers of Commerce have formed the Anglo-Dutch Trade Council to promote British trade with Holland, Although there has been a Dutch Chamber of Commerce in London since 1890, until now there was no similar organisation in Holland. The address of the council is 99 Jan Van Nassaustraat, The Hague, Holland, and the secretary is Mr. H. N.

Schepp. Ceylon's Economic Situation.-With State of Emergency still existing in Ceylon and labour troubles persisting, the position in the port of Colombo has worsened, and the adverse effects of the port congestion on the normal pattern of business between the United Kingdom and Ceylon are now more severe. Importers unable to secure their cargoes are seeking still further accommodation from their bankers and requesting longer terms of credit. Even the long-established importers possessing what were once regarded as adequate reserves are finding them-selves increasingly embarrassed. While present difficulties last, British exporters are advised to consult the Board of Trade (Export Services Branch) before entering into contractual arrangements

with Celonese importers, except those

whose credit-worthiness is beyond all

doubt.

South African Dumping Duty. -Section 84(a) of the South African Customs Act of 1955 provides, at present, for the imposition of Ordinary Dumping Duty which is the amount by which the current domestic value exwhich the current domestic value exceeds the export price if such amount is greater than 5 per cent, of the export price. A notice of motion was tabled in the South African House of Assembly on August 21, which provides for the deletion of the words "if such amount is greater than 5 per cent of the export price" from that paragraph. Thus the 5 per cent, tolerance now provided for will cease for all imports effected after the date that the effected after the date that the provision becomes law, which is expected to be about mid-October, regardless of date of shipment. Goods may thereupon be considered as "dumped" if their export price is actually more than their domestic value even if the difference is less than 5 per cent.

TRADE MARKS

APPLICATIONS ADVERTISED BEFORE REGISTRATION

From the "Trade Marks Journal," September 10 For chemical products for use in agriculture, being goods for application by spraying (1)
AGRISPRAY, 774,360, by the Agricultural
Spraying Co., Ltd., Cavendish, Suffolk.

For perfumes, toilet preparations (not medicated), cosmetic preparations, dentifrices, depilatory preparations, toilet articles (not included in other classes), sachets for use in waving the hair, and

MAESTRO, 773,510, by Cosmetische Producten General Cosmetics, N.V., Amsterdam, Holland. For all goods, but not including essential oils or any goods of the same description (3) HOLCON, 774,643, by E. R. Holloway, Ltd.,

Welwyn Garden City, Herts.

For toilet preparations for the hair (3) Device, 775,907, by the Master Vending Machine Co., Ltd., London, N.W.2.

For cosmetics and non-medicated toilet prepara-

BIOTHERM, 778,095, by Société Française des Cosmetiques Biologiques, Nice, France.

For pharmaceutical products and dental mate-

EMOFORMA, 767,312, by Dr. Wild & Co., Basle, Switzerland.

For synthetic hormones, being chemico-pharmaceutical products (5)

ADROID, 770,470, by Parke, Davis & Co., Detroit, Michigan, U.S.A., and Hounslow, Middlesex.

For spraying preparations for domestic use, disinfecting and deodorising (5)
ADORA, 775,361, by J. S. Evans, Ltd., Sal-

For pharmaceutical preparations and substances, all in tablet form for human and veterinary use

(5)
DURATABS, 775,456, by Organon Laboratories, Ltd., London, W.C.2.

For medicated ointnient for use in the treatment of hard skin (5) EZZAR, B775,698, by Bernard Eamonn Lav-

erty, Coventry, Warwicks. For pharmaceutical substances and preparations

containing iron (5)
FERRALGIN, 775,806, by West Pharmaceutical Co., Ltd., London, S.W.1.

For pharmaceutical preparations (5)

KYR, 775,895, by Clinical Products, Ltd., Richmond, Surrey.

For all goods (5)

FIZRO, 776,344, by Aspro-Nicholas, Ltd., Slough, Bucks, ACNACYL, 776,755, by Genatosan, Ltd., Loughborough, Leics.

For pharmaceutical preparations in tablet form for human use by oral administration (5)
DEXT1M, 776,380, by Clinical Products, Ltd.,

Richmond, Surrey.

For preparations containing vitamins for veterinary use by injection (5)
VITADEX, 776,410, by the Crookes Laboratories, Ltd., London, N.W.10.

For rodenticides (5)

DIPHACIN, 777,090, by Food Machinery and Chemical Corporation, New York, U.S.A.

For insecticides, fungicides and weedkilling pre-

parations (5)
DIQUAL, 777,980, by Plant Protection, Ltd., Yalding, Kent.

For disinfectants. veterinary preparations, inpreparations for killing weeds and brushwood (5)
HERRIFEX, 778,385, by Burt, Boulton & Haywood, Ltd., London, W.C.2.

For optical and photographic apparatus and instruments; lenses, magnifying glasses; and range finders and photographic exposure tables (9) SYMMAR, 761,123, by Jos. Schneider & Co., Kreuznaeh, Rhineland, Germany.

For photographic and cinematographic apparatus and parts (9)

GUCKI, 777,007, by Agfa, A.G., Leverkusen, Germany.

COMING EVENTS

Items for inclusion under this heading should be sent in time to reach the Editor not later than first post on Wednesday of the week of insertion.

Monday, September 22

BUSINESS EFFICIENCY EXHIBITION, city hall, Manehester. (Until September 27.)

ENFIELD AND DISTRICT CHEMISTS' ASSOCIATION. Enfield arms, Genotin Road, Enfield, at 7,30 p.m. Films.

STOCKPORT BRANCH, PHARMACEUTICAL SOCIETY, Warren Bulkeley hotel, Warren Street, at 7.45 p.m. Annual meeting.

Tuesday, September 23

NORTH STAFFORDSHIRE BRANCH, PHARMACEUTICAL Society, North Stafford hotel, Stoke-on-Trent, at 7.30 p.m. Members' night.

Wednesday, September 24

LEICESTER AND LEICESTERSHIRE BRANCH, PHAR-MACEUTICAL SOCIETY, Bell hotel, Leicester, at 7.30 p.m. Exhibition of members' films and transparencies.

LONDON CHEMISTS' GOLFING SOCIETY, Chigwell golf club, Essex. Fixture.

SOUTH LONDON AND SURREY PHARMACISTS' GOLF-ING SOCIETY, Shirley Park golf club, Addis-combe Road, Croydon, At 1.30 p.m., golf; at 7.30 p.m., annual supper and presentation of the season's trophies.

Thursday, September 25

HARROGATE AND DISTRICT BRANCH OF THE PHAR-MACEUTICAL SOCIETY. Blue Bird café, Parliament Street, Harrogate, at 7.30 p.m. Mr. T. Heseltine, M.P.S., on "The National Health Service in General."

INSTITUTE OF BIOLOGY, lecture hall, Royal Geographical Society, Kensington Gore, London. S.W.7, at 10 a.m. Symposium on "The Effects of Pollution on Living Material." (Until September 26.)

NOTTINGHAM AND DISTRICT BRANCH OF THE ASSOCIATION OF WOMEN PHARMA-CISTS. Visit to the Nottingham Playhouse. Particulars from Mrs. M. Wilkinson, 84 Elveston Road, Nottingham.

COMMERCIAL **TELEVISION**

PROGRAMME details are given to enable chemists to put in linking-up displays if they wish. Notice given is as far in advance of the programme date as can be guaranteed by the broadcasting companies. Where known, the number of appearances of the product during the week Where known, the number is shown in parentheses.

September 28-October 4 LONDON

Ajax. Amami wave set (3). Alka-Seltzer (2), Jax. Amami wave set (3), Alka-Seltzer (2), Astral soap (3), Azymil capsules (3), Beecham's pills (3), powders (3), Bristow's lanolin shampoo (3), Brylcreem (2), Cadum soap, Colgate's tooth-paste, Damaskin, Delrosa (2), Digestif Rennies, Diuromil,

Eno's Fruit Salt, Euthymol tooth-paste, Fresh-Aire (2), Galc's honey, Germolene, Gillette razors and blades (2), Gleem (2), Heath and Heather preparations, Horlicks (2), Loxene shampoo (3).

Maclean's indigestion products (2), tooth-paste (3). Milk of Magnesia. Moorland's indigestion tablets. Nervonc (2). O-de-Dent (2), Palmolive soap. Pepsodent tooth-paste (5), Phensic (3). Phosferine (2), P.L.J. (2), Pond's toilet preparations. Punch and Judy tooth-paste, Rinstead pastilles. Rosemary shampoo.

Sebbix shampoo. Silvikrin shampoo (2), hair cream. Simpkins' preparations. S.R. tooth-paste (2). Thru. Trojan soap pads. Trugel (2). Vinglia derma (2). Veno's cough cure baby products (3). Vosene shampoo (2). "Water Lilies" shampoo (2).

MIDLAND

Ajax, Amami wave set, Alka-Seltzer, Atkinson's "Skin Deep" (2), Azymil capsules (3).

Beecham's pills, powders (2), Bristow's lanoshampoo, Brylcreem (2), Colgate's toothpaste. Delrosa (2), Digestif Rennies,

Eno's Fruit Salt (2). Euthymol tooth-paste (2). Fresh-Aire (2) Germolene, Gillette razors and blades (2). Gleem tooth-paste. Horlicks. Johnfirst-aid cream (3), Kolynos tooth-paste Loxene hair eream, shampoo (3), Lucozade.

Maclean's indigestion remedies (3), Moorland's indigestion tablets (2). Palmolive soap. Pepsodent tooth-paste (5). Phensie, Phosferine. Pond's toilet preparations, Ribena (2).

Sanatogen, Sebbix shampoo, Silvikrin shampoo (2), hair cream (3), Sprinkleen, S.R. tooth-paste (3), Thru (4), Trojan soap pads, Trugel. Valderma (3). Veno's cough cure (2). Vinolia baby products (2). Vosene shampoo (2). "Water Lilies" shampoo (2).

NORTH

Ajax. Amami wave set. Alka-Seltzer (2), Azymıl capsules (3). Beecham's pills (2), powders (2). Janolin shampoo, Brylereem. Cadum. Cephos (4). Colgate's tooth-paste (2). Cutex "Stay-Fast" lipstick (2). Delsey, Delrosa (2). Dento (2), Digestif Rennies, Dr. Page Barker's lotion (2).

Eno's Fruit Salt (2), Euthymol tooth-paste (2). Fresh-Aire (2), Gillette razors and blades (2), Gleem tooth-paste (2), Hiltone, Horlicks, Loxene shampoo (3), Lucozade (2),

Maclean's indigestion remedies (3), tooth-paste. Moorland's indigestion tablets (2). soap. Pepsodent tooth-paste (6). Phensie (3), P.L.J. (2). Pond's toilet preparations.

Sanatogen, Sebbix shampoo (2), Setlers (2), Silvikrin pure, shampoo (2), hair cream. Supavite (3), Sprinkleen. S.R. tooth-paste (3). Thru (2). Sprinkleen, S.R. tooth-paste (3). Trojan soap pads, Valderma (4). Veno's cough cure (2). Vinolia baby products (3). Vosene shampoo (2). "Water Lilies" shampoo (3).

SCOTLAND

Ajax, Amami wave set. Alka-Seltzer, Askit (7). Atkinson's "Skin Deep" (3). Beecham's pills (2), powders (2). Bristow's lanolin shampoo Brylcreem. Cadum soap. Colgate's tooth-paste. Delrosa (2), Diuromil (3).

Eno's Fruit Salt (2), Euthymol tooth-paste (2), Germolene (3), Gillette razors and blades (2). Gleem tooth-paste, Loxene shampoo (3).

Maclean's indigestion remedies (2), tooth-paste. Moorland's indigestion tablets. Pepsodent toothpaste (7). Phensic, Phosferine (2). P.L.J. (2).

Sebbix shampoo. Silvikrin shampoo, hair cream (2). Simpkins, S.R. tooth-paste (9). Thru (2). Vinolia baby products (3). Vosene shampoo (2). "Water Lilies" shampoo (2).

WALES
Amami wave set (3). Alka-Seltzer (2). Beecham's pilis (2), powders (2). Bristow's

lanolin shampoo (3). Cadum soap. Colgate's tooth-paste, Delrosa (2), Digestif Rennies (3). Diuromil.

Eno's Fruit Salt, Euthymol tooth-paste (2), Fresh-Aire, Gillette razors and blades, Gleem tooth-pastc, Loxene, Lucozade (3).

Maclean's indigestion remedies (2). baby pants (3) Moorland's indigestion tablets. Pepsodent tooth-paste (8), Phensie (3), Phosferine (2), P.L.J. Phyllosan (2),

Sebbix shampoo (2), Silvikrin shampoo (2), hair eream (2), Sinykin, Sprinkleen, S.R. tooth-paste (3), Thru (2), Trojan soap pads (2), Veno's cough cure (3), Vinolia baby products (3), Vosene shampoo (3), "Water Lilies" shampoo (2).

SOUTH
Ajax. Amami wave set (2), Cadum soap, Colgate's tooth-paste.

Gillette razors and blades. Gleem tooth-paste. Horlieks (2). Knight's Castile soap (7). Lovene shampoo (3).

Moorland's indigestion tablets. Pepsodent tooth-

Silvikrin shampoo (2), hair cream (2), Valderma (6). Vinolia baby products (3). Vosene shampoo (2). "Water Lilies" shamsham-

PRINT AND PUBLICITY

PUBLICATIONS

Price Lists

MAWSON & PROCTER PHARMACEUTICALS, LTD., St. Crispin's Buildings, Low Friar Lane, Neweastleon-Tyne, I: Ethical pharmaceuticals and counter proprietaries, June, Pp. 260.

MAY & BAKER, LTD., Dagenham. Price list 1958. Amendments, Pp. 4.

NEWMARK & Co., Ltd., 5 Watling Court, Cannon Street, London, E.C.4. Chinese, industrial and pharmaceutical chemicals, essential oils and aromatics.

PRESS ADVERTISING

REMINGTON RAND, LTD. (Shaver Division), 26 Kensington High Street, London, W.8, National newspapers.

WIILIAM FREEMAN & CO., LTD., Peel Street, Barnsley, Suba-Seal hot-water bottles. In Woman's Realm, Woman's Day, Good Housekeeping, Homes and Gardens, Wife and Home, My Home, Everywoman, Housewife, Modern Woman, She, Woman's Journal, Family Doctor, T.V. Mirror, Home.

LAMBERT CHEMICAL Co., L.ID., Eastleigh, Hants. Rheumatisone cream, In News of the World, People, Sunday Pictorial, Sunday Empire News,

Woman's Woman's Own, Woman's Day, Woman's Weekly, Woman's Illustrated.



SHOWSTAND: Stand incorporating pieces and three small shelves for the perfumes, skin care and make-up of Lancôme (England), Ltd., 14 Grosvenor Street, London, W.1.

THE SURGICAL HOSIERY CO., LID., Russell Street, Nottingham. Activ-ease hosiery, In newspapers and magazines

THORNTON & ROSS, LID., Linthwaite, Huddersfield: Vi-Lan lanolin cream. In Sunday Express.

Medical Propaganda

Manufacturers' leaflets, folders, booklets, etc., directed to doctors but available to pharmacists. BRITISH SCHERING, LTD., 229 Kensington High Street, London, W.8; "Orasecron" (blotter). "Neutradonna" (information card).

GEIGY PHARMACEUTICAL CO., LTD., Roundthorn Estate, Wythenshawe, Manchester, 23. "Desogen ' lozenges (information eard). Folia Dermatologica Eczema I (11-p. booklet). Documenta Rheumatologica No. 3 (73-p. book).

GLAXO LABORATORIES, LTD., Greenford, Middle-sex: "El-Cortelan" injections (information eard). Immunilogical preparations (summary

MAY & BAKER, Ltd., Dagenham: "Pharmaceuti-eal Chemicals," "Largactil," "Phenergan Elixir " (information eards).

ROUSSEL LABORATORIES, LTD., 847 Harrow Road, London, N.W.10. "Gonadyl" (10-p. booklet). "Asmacort" (3-p. folder). "Baetylan" (6-p.

Upjohn of England, Ltd., Crawley, Sussex: "Neo-Cortef" topical preparations (2-p. fol-

C. & D. WEEKLY LIST OF PRICES

A = Advanced; R = Reduced; I.R.P. = Inclusive Retail Price; * = Tax 30 per cent.; ‡ = Tax 60 per cent.

KODAK, LTD. (from September 15) 1.R.P. Kodaslide home projector 189 0 R		7 2 2 11 5 0	HALEX DIVISION, BRITISH CO., LTD,	XYLONITE
PARKE, DAVIS & CO., LTD, (from September	NIGROID FERRIS, LTD.		Halex king-size nailbrush	4 11
15) Metagen capsules* 50 8 8½ R tax-free dispensing pack		7 2 1 0	MELLINS FOOD, LTD. Milk shake in a straw	1 3
250 28 0 R	NEW PRODUCTS AN	D PACKS	FASSETT & JOHNSON, LTD.	
SMITH & NEPHEW, LTD, (from October 15)	ELIZABETH ARDEN, LTD.		Doz	
Blue Velvet hand lotion: 9 9 1 8 R	Creme "Extrordinaire"; introductory size	9 6	Creme Sevilan‡ 84	2 14 9
Nivea creme soap* 15 6 2 8 R 9 R	introductory size	63 0 105 0 189 0	PASCALL-KNIGHT, LTD. Guavin	2 9
P.A.T.A. LIST		102 0	CHAS. H, PHILLIPS CHEMICAL	CO., LTD.
(Alterations notified this week by the Proprietary Articles Trade Association.)	BAYER PRODUCTS, LTD.	Each	Doz Milpar (plain)* 4 oz. 14 7	
E. R. SQUIBB & SONS, LTD.	Actal* 48	3 5 11	Мираі (ріані) 4 02, 14	2 0
Each	250 I4 1,000 44	4 2 25 6 4 0 79 2	HELENA RUBINSTEIN, LTD.	
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100 208 0 312 0 R	Drydex 2ET20 torch	7 6	·	0
ADDITIONS TO THE LIST	WILLIAM FREEMAN & CO.,	1.775	SILMOR DISTRIBUTING CO. Doz.	
BOWATER-SCOTT CORPORATION, LTD. Doz.		Doz.	André Philippe brillian-	
Scot tissues single 8 11 1 0	Warmline hot-water bottle 63	3 4 7 11	tine hair spray‡ 10 0	19
double 17 0 1 11	GALA OF LONDON, LTD.		MUNRO VITAREX, LTD.	
HORLICKS, LID.	" Nail Fantasy "	5 6	Creme Regenoderm (tubes)	20 0
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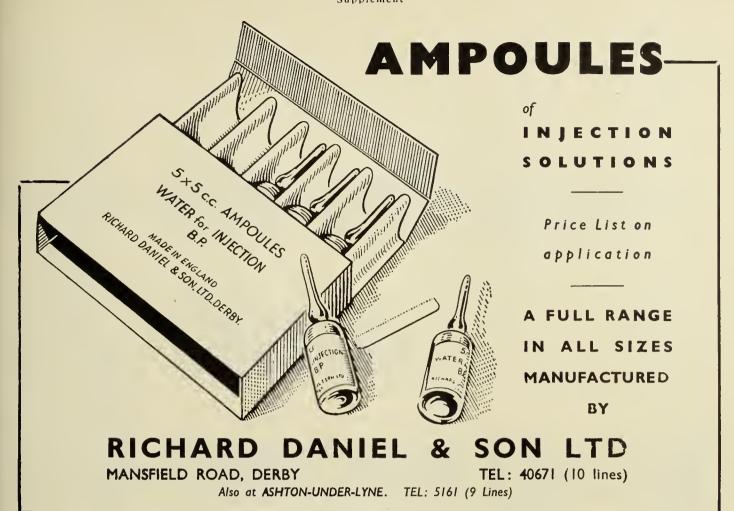




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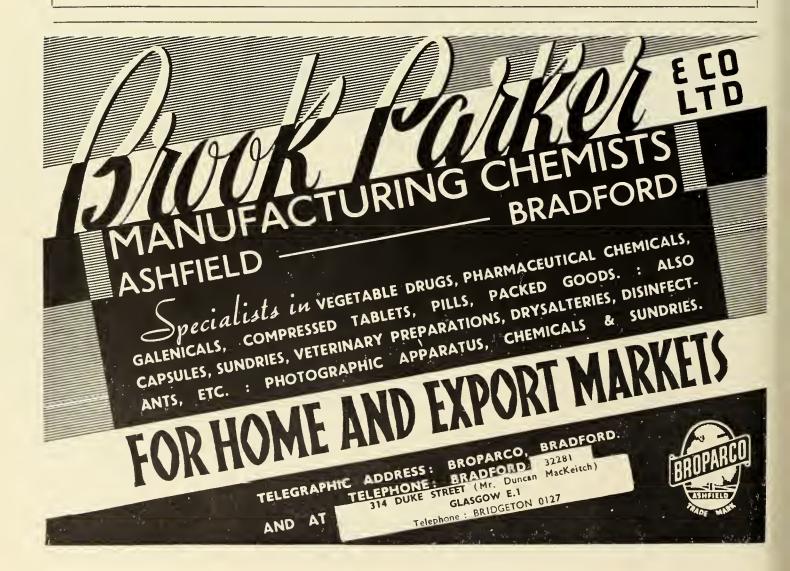
EXERCISES IN THE EVALUATION OF DRUGS AND SURGICAL DRESSINGS

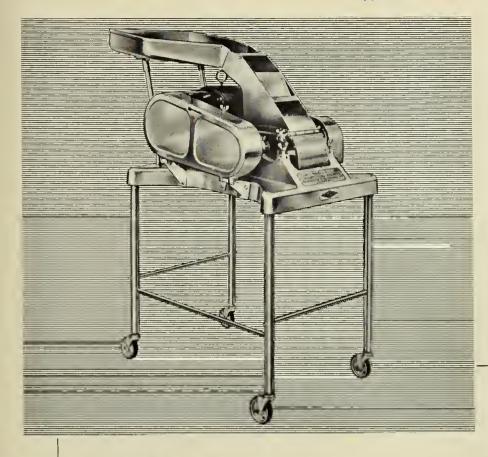
E. J. Shellard, Lecturer in Pharmacognosy, Chelsea Polytechnic. A new book for pharmacy students to be published Autumn 1958

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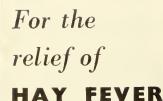
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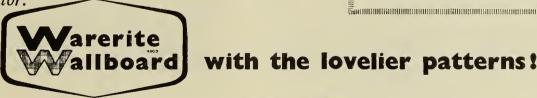
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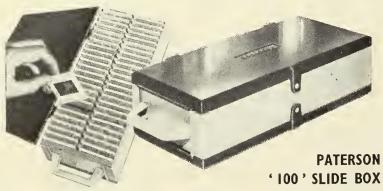
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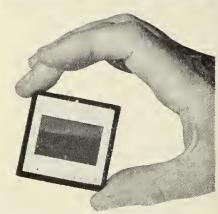
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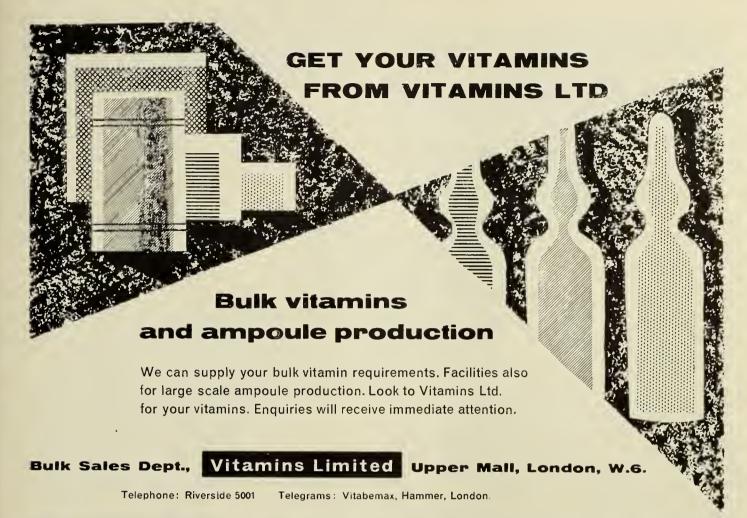
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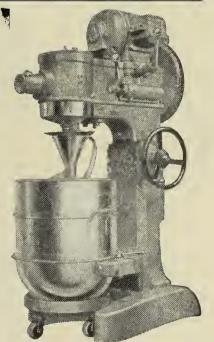


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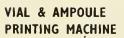
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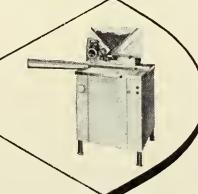
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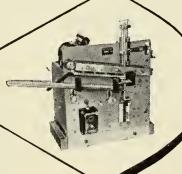
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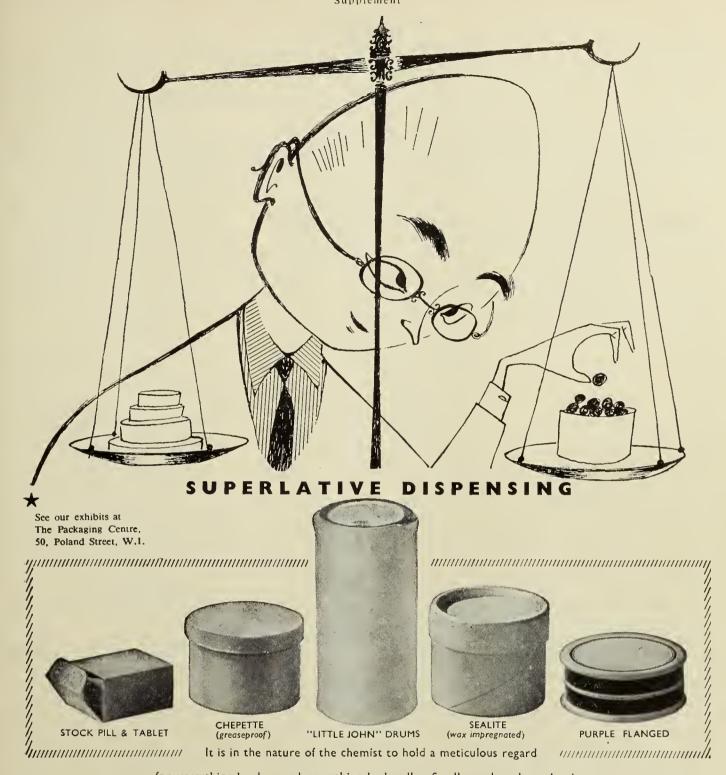
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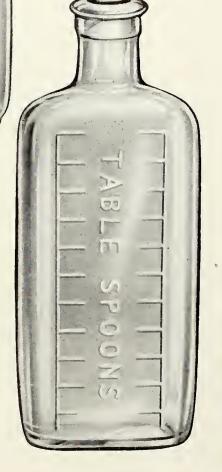


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